Roanoke Valley Area
Metropolitan Planning Organization
313 Luck Avenue, SW / PO Box 2569 / Roanoke, Virginia 24010
TEL: 540.343.4417 / FAX: 540.343.4416 / www.rvarc.org / rvarc@rvarc.org

March 30, 2004

Mr. Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, VA 23219

Dear Director Burnley:

It is with great pleasure that the Roanoke Valley Area Metropolitan Planning Organization (MPO) submits the final Ozone Early Action Plan (EAP) and all supporting documentation for the Roanoke Metropolitan Statistical Area. The council and/or board of each participating local government has endorsed the Ozone EAP through an officially adopted resolution. Neighboring local governments, individual businesses and chambers of commerce have also pledged their support to the successful implementation of strategies in the Ozone EAP (see the Appendix of the plan for copies of resolutions and letters of support).

On behalf of the MPO, I want to thank you for your agency's generous contributions of time, talent and resources to the completion of the Ozone EAP. Tom Ballou, Jim Sydnor, Bob Saunders and their associates were key players in the entire process.

If you have any questions, or feel that additional materials are needed, please do not hesitate to contact us at (540)343-4417.

Sincerely,

Mayor Don Davis, Chairman,
Roanoke Valley Area Metropolitan
Planning Organization

Wayne G. Strickland, Executive Director,
Roanoke Valley-Alleghany Regional
Commission

Ozone Early Action Plan

For

The Roanoke Ozone Early Action Compact Area

March 31, 2004

ROANOKE CLEAN AIR PLAN

TABLE OF CONTENTS

Ozone Early Action Plan
For the
Roanoke Ozone Early Action Compact Area

1. BACKGROUND

A. Introduction & Project Background

In 1997 the United States Environmental Protection Agency (EPA) established a new 8-hour ozone National Ambient Air Quality Standard (NAAQS). This standard was the result of a review of ground level ozone and related health impacts, and was set to replace the older 1-hour standard. The purpose of this new standard was to address the longer-term impact of ozone exposure at lower levels. As such, the new standard is set at a lower level (0.08 parts per million) than the previous standard (0.120 parts per million) and is more protective of human health.

As part of the implementation of the new standard, states submitted area designation recommendations to the EPA in June of 2000 that identified potential ozone nonattainment areas based on air quality data from 1997 to 1999. The Roanoke Metropolitan Statistical Area (MSA) was identified at that time as one of the potential nonattainment areas in Virginia, mainly based on the fact that ozone concentrations exceeding the standard had been recorded at the monitor located in the Town of Vinton. The State and EPA have reaffirmed this designation in subsequent nonattainment recommendations and proposals.

During the development of these state recommendations, a number of concerns were raised by the potential nonattainment areas about the adverse impacts of a possible nonattainment designation on these areas. In response, the Virginia Department of Environmental Quality (DEQ) began to investigate voluntary actions that could be implemented proactively to improve air quality and lessen the possible impact of a formal nonattainment designation in areas that marginally exceed the new standard.

The most promising of all the options explored is the EPA's ozone Early Action Compact (EAC) program. The EAC concept was originally developed by several areas in Texas in early 2002 and subsequently endorsed and expanded by the EPA as national voluntary program.

EACs are voluntary agreements by the localities, states, and the EPA to develop Early Action Plans (EAPs) to reduce ozone precursor pollutants and improve local air quality in a proactive manner, and in a shorter time than what would occur through the traditional nonattainment area designation and planning process. These plans must include the same components that make up traditional State Implementation Plans (SIPs). This includes emissions inventories, control strategies, schedules and commitments, and a demonstration of attainment based on photochemical modeling.

The goal of an EAP is to develop a comprehensive strategy that will bring an area into attainment of the 8-hour ozone standard by 2007. This goal is will be achieved by selecting and

implementing local ozone precursor pollutant control measures that when combined with other measures on the state and national level, are sufficient to bring the area into compliance with the standard. If the area is successful in developing a plan that demonstrates attainment of the 8-hour ozone standard by 2007, the EPA will defer the effective date of the nonattainment designation for the area. This deferral will remain in place as long as certain milestones are met, such as implementation of local controls by 2005. If all interim milestones are met and the area demonstrates attainment of the standard during the period from 2005 to 2007 through air quality data, then the nonattainment designations will be withdrawn by EPA, without further regulatory requirements. If an area fails at any point in the process, it will revert back to traditional nonattainment status, with all the associated requirements of such a designation.

The Roanoke MSA area entered into an Early Action Compact with both the Commonwealth and EPA for the area including Botetourt and Roanoke Counties, the Cities of Roanoke and Salem, and the Town of Vinton. This Compact was signed by all the parties involved and then submitted to the EPA by the required date (December 31, 2002). The area has subsequently established and commissioned the Roanoke Early Action Plan Task Force to serve as the major stakeholder group to coordinate the development of an early action plan for the area. This Task Force has a diverse and knowledgeable membership, which greatly aided the development of a comprehensive plan.

Both this area, and the other Early Action Compact area in Virginia (Northern Shenandoah Valley), are well suited for this project due to their geographic location and extent, marginal nonattainment air quality levels, and common influences of ozone transport and other external factors. Both areas are located in the western part of Virginia and would be separate and relatively small nonattainment areas, if formally designated.

The remainder of this final plan and report describes the project area, the significant events and progress made thus far, efforts to encourage public participation in the process, and the technical support activities completed support the overall planning effort.

B. The 8-Hour Standard in the Roanoke Metropolitan Statistical Area (MSA)

During the past several years air quality planning in the Roanoke MSA has intensified as ozone concentrations in the Roanoke MSA have exceeded the value permitted by the 8-hour ozone NAAQS. Due to legal challenges to the NAAQS and ensuing litigation, EPA has not formally designated areas of the United States in violation of the 8-hour ozone NAAQS. The 8-hour NAAQS has been upheld and EPA anticipates nationwide designation of nonattainment areas by 2004. Based on recent monitoring data, it is probable that the Roanoke MSA will be designated a nonattainment area when formal designations occur.

The 8-hour ozone standard is determined by averaging three years of the fourth highest 8-hour ozone levels in an area. This number, called the design value, must be lower than 85 parts per billion (ppb) to meet the standard. Currently, the Roanoke MSA design value (averaging 2001, 2002 and 2003) is 85 ppb. Each year this design value may vary. Data is available for the Roanoke MSA for the 8-hour ozone standard beginning in 1990. Ozone concentrations have exceeded the standard a total of 30 times during the period from 1990 to 2003. The number of exceedences recorded in Roanoke from 1991 to 2003 are shown below. Data from the

monitors in Wythe and Rockbridge Counties are also shown for comparison purposes:

Roanoke, VA (Vinton Monitor)

91	92	93	94	95	96	97	98	99	00	01	02	03
2	0	2	2	2	0	2	13	6	2	5	5	1

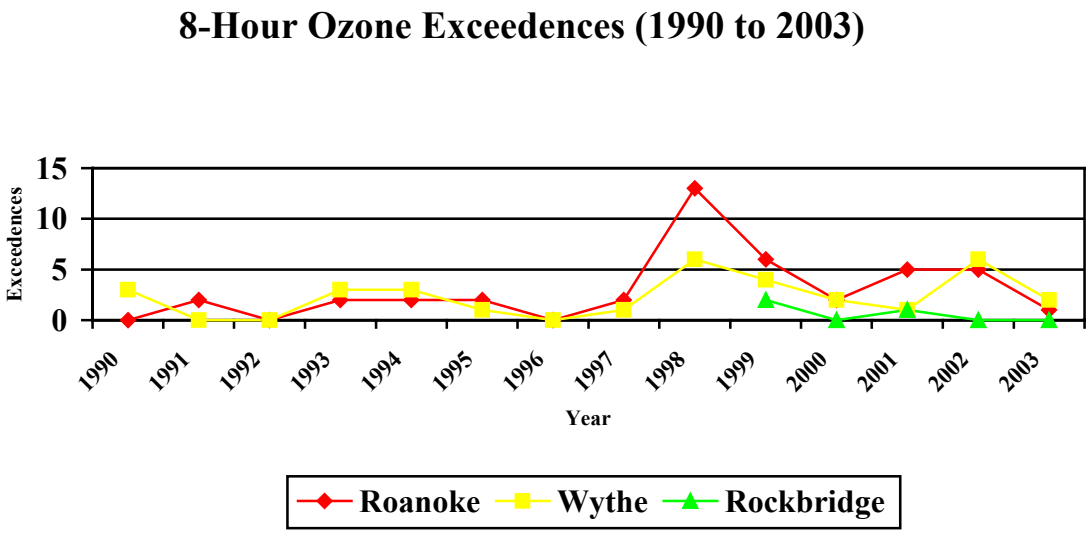
Wythe County, VA

91	92	93	94	95	96	97	98	99	00	01	02	03
0	0	3	3	1	0	1	6	4	2	1	6	2

Rockbridge County, VA

91	92	93	94	95	96	97	98	99	00	01	02	03
(New Monitor beginning operation in 1999)								2	0	1	0	0

Figure 1 – Roanoke 8-hour Ozone Standard Monitor Data



In 2002 and 2003, the Roanoke monitor recorded 8-hour exceedences on the following days:

2002		**2003**	
June 11	91 ppb	June 25	91 ppb
July 17	94 ppb		
August 10	85 ppb		
August 11	92 ppb		

August 13 99 ppb

C. OZONE EARLY ACTION PROGRAM (OEAP)

The region agreed and committed itself to the OEAP process to expedite air cleanup for future public health and welfare. The OEAP was developed according to protocol endorsed by EPA Region 6 on June 19, 2002. The Protocol offers a more expeditious time line for achieving clean air than expected under EPA's 8-hour implementation rulemaking.

The principles of the OEAP to be executed by Local, State and EPA officials are:

- Early planning, implementation, and emission reductions leading to expeditious attainment and maintenance of the 8-hour ozone standard;
- Local control of the measures to be employed, with broad-based public input;
- State support to ensure technical integrity of the OEAP;
- Formal incorporation of the OEAP into the SIP;
- Deferral of the effective date of nonattainment designation and related requirements so long as all OEAP terms and milestones are met; and
- Safeguards to return areas to traditional SIP requirements should OEAP terms and/or milestones be unfulfilled, with appropriate credit given for emission reduction measures implemented.

The Roanoke MSA OEAP has two principal components:

1. The Early Action Compact (EAC) — EAC was the Memorandum of Agreement to prepare and implement an Early Action Plan (EAP). More specifically, the EAC established measurable milestones for developing and implementing the EAP.

2. The Early Action Plan (EAP) — This EAP serves as Roanoke MSA's official air quality improvement plan, with quantified emission-reduction measures. The EAP will include all necessary elements of a comprehensive air quality plan, (like the plans in Richmond, VA), but will be tailored to local needs and driven by local decisions. Moreover, the EAP will be incorporated into the formal SIP and the region will be legally required to carry out this plan just as in nonattainment areas. For example, development of EAP will require the same scientific diligence and undergo the same scrutiny as the nonattainment areas' SIPs, so that the emission reduction strategies selected will be adequate to ensure the region stays in attainment of the 8-hour standard.

OEAP Versus Traditional Nonattainment

A major advantage of the region's participation in an OEAP is the flexibility afforded to the signatories in selecting emission reduction measures and programs that are best suited to local needs and circumstances. Recognizing the varied social and economic characteristics of the region, not all measures can or should be implemented by every entity.

- The OEAP allows for more local control in selecting emission-reduction measures.
- The OEAP provides deferral of nonattainment designation and related requirements, as long

as Plan requirements and milestones are met. This would prevent any related stigma associated with a nonattainment designation.

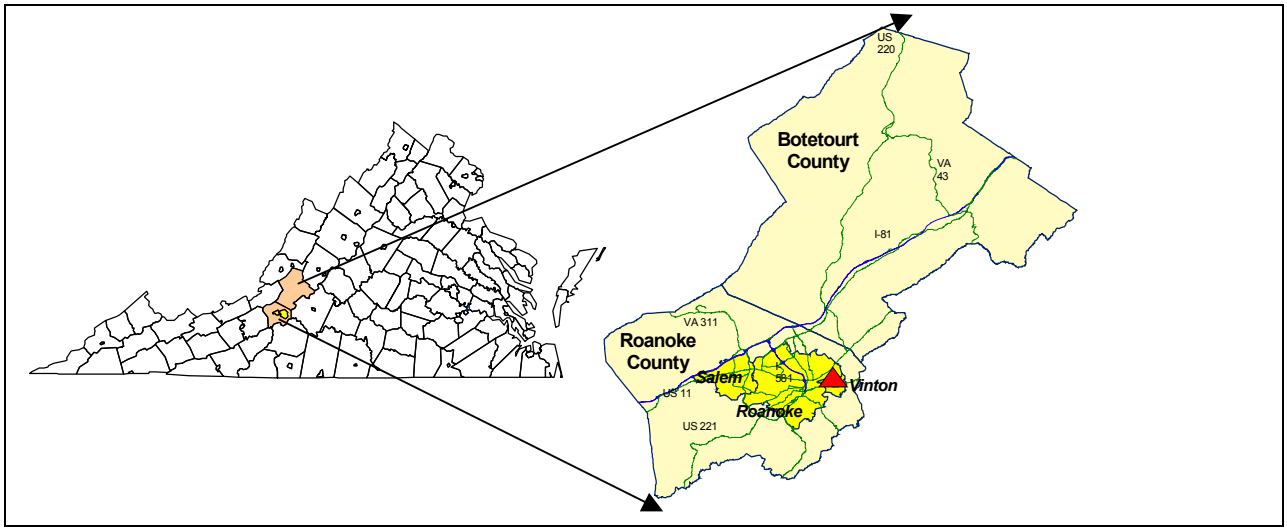
- The OEAP is designed to achieve clean air faster than under the traditional SIP process.
- Should any milestones be missed in designing or implementing the Plan, the area would automatically revert to the traditional SIP requirements, with appropriate credit given for emission reduction measures already implemented.

The Roanoke MSA's OEAP is designed to enable a local, proactive approach to ensuring attainment of the 8-hour ozone NAAQS, and so protect human health. Using the OEAP approach, the region could begin implementing by 2005 emission-reduction measures directed at attaining the 8-hour standard. This allows for a significantly earlier start than waiting for formal EPA nonattainment designation and it gives more flexibility in choosing which emission reduction strategies to implement. The area is then required to demonstrate compliance with the ozone standard by 2007 through ozone monitoring data.

D. Description of the Early Action Compact Area

The Roanoke Metropolitan Statistical Area (MSA) is located within the Blue Ridge Mountains area of Virginia, and has typical topographic characteristics of such a mountain & valley area. The major urbanized center area is located in a valley and made up of the Cities of Roanoke and Salem, along with the Town of Vinton where the ozone monitor for the area is located. The more suburban and rural Roanoke County with Botetourt surrounds this core urban area to the North. The major commercial transportation corridor of Interstate 81 runs through the entire MSA from north to south, which is just to the west of the urban core. A significant portion of Northwestern Botetourt County is rural and part of the Jefferson National Forest.

Figure 2 – Roanoke Early Action Area



The vital statistics of the area in terms of ozone related criteria are as follows:

- Land Area – 851 square miles

- Population (2000) – 235,932

- Population density (2000) – 277 per square mile
- Projected Population (2010) – 244,499
- Volatile Organic Compound Emissions (2002) – 45 tons per day
- Oxides of Nitrogen Emissions (2002) – 50 tons per day
- Prevailing Ozone Season Wind Direction – From the Southwest
- 8-hour Ozone Design Value (2001 – 2003) – 0.085 parts per million

2. PROJECT ORGANIZATION & PROGRESS SUMMARY

The Ozone Early Action Plan development process is a joint effort of the Roanoke Valley Area Metropolitan Planning Organization and the Virginia Department of Environmental Quality. The Roanoke Valley-Alleghany Regional Commission (RVARC) is the administrative agency for the Roanoke Valley Area Metropolitan Planning Organization. Staff with the Commission have been

detailed to work on the Ozone Early Action Plan and to manage the involvement of a consultant, E.H. Pechan & Associates, which assisted with development of the plan.

A. Project Organization

The Ozone Early Action Plan Task Force was established to guide the consultant and Roanoke Valley-Alleghany Regional Commission staff in the development of the Ozone Early Action Plan when it is not practical to engage the public at large on every minor detail. The Task Force is staffed by the RVARC, making Wayne Strickland the Task Force's ex-officio director.

B. Progress Summary

On June 30, 2003, the 1st Semi-Annual Status Report was submitted to EPA. That report fulfilled the first reporting milestone required by the EAC.

The 2nd Semi-Annual Status Report in December 2003 provided a list of the control measures under consideration for adoption by the Roanoke areas. This report listed and described each measure and provided the likely implementation dates, a current assessment of the amount of emission reductions expected to be achieved through implementation of the measure, and the geographical area in which each control measure is anticipated to apply.

The specific process used to select and evaluate local control measures is presented below:

- During the August taskforce meeting, all participating members cast initial votes for potential control measures to be carried forward in process from the original June 16th potential local control measure list that was submitted to EPA. The top measures from this voting were those the group generally believed were most likely to be effective and acceptable if included in the final local control plan.

- Three subcommittees made up of taskforce members were established during the September meeting to individually evaluate each potential local control measure that was

previously voted forward in the process. These subcommittees covered the following categories of potential local controls:

1. Heavy Duty Diesel and Diesel equipment strategies
2. Air-quality action day, public education, and stationary sources strategies
3. Lawn and garden equipment strategies

The individual committees met continuously during October to define, evaluate, and quantify the measures in each category. Once this process was completed, a draft local control plan was developed and presented to the whole task force in November and accepted for inclusion in the status report during the December taskforce.

The subsequent draft final Early Action Plan (EAP) was then developed and presented for formal adoption to each the governing body of each jurisdiction involved. In turn, each jurisdiction has formally adopted the plan and committed to its subsequent implementation. The formal resolutions of adoption are present in Appendix B.

C. Stakeholder Involvement and Meetings

The "Task Force" is staffed by the RVARC, making Wayne Strickland the ex-officio director of the "Task Force." Thus far, we have not turned away any stakeholder interested in serving on the Ozone EAP Task Force. Thus, the complete make-up of the Task Force is not static; however, its approximate current makeup includes representation from the following organizations at a minimum ***(Blue Ridge Bicycle Club, Roanoke Regional Chamber of Commerce, Blue Ridge Environmental Network, US Forest Service, Piedmont Environmental Council, RIDE Solutions, Salem – Roanoke County Chamber of Commerce, Virginia Tech, Norfolk Southern Corp., Southern Environmental Law Center, Clean Valley Council, Roanoke Valley Greenways Commission, Roanoke Valley Asthma and Air Quality Coalition, Sierra Club – Virginia Chapter, Roanoke Valley Economic Development Partnership, Roanoke Valley Resource Authority, Virginia Health Department, City of Roanoke, City of Salem, County of Roanoke, County of Botetourt, Town of Vinton, Virginia DEQ, Virginia DOT (VDOT), Federal Highway Administration)*** Many other organizations have participated on an ad hoc basis. There is room for new organizations to participate as the planning process continues.

- ***Monday December 16, 2002*** Early Action Compact (EAC) Signing Ceremony, Public and Press Invited, Press Releases preceded the event, a media pack was developed in conjunction with RVARC's on call PR Consultant.
- ***January 14, 2003*** Ozone EAP Task Force Kickoff meeting (*see Task Force Makeup Above)
- ***Wednesday February 19, 2003*** – EAP was featured in Leadership Roanoke Valley Air Quality Program at Roanoke County Fire and Rescue Training

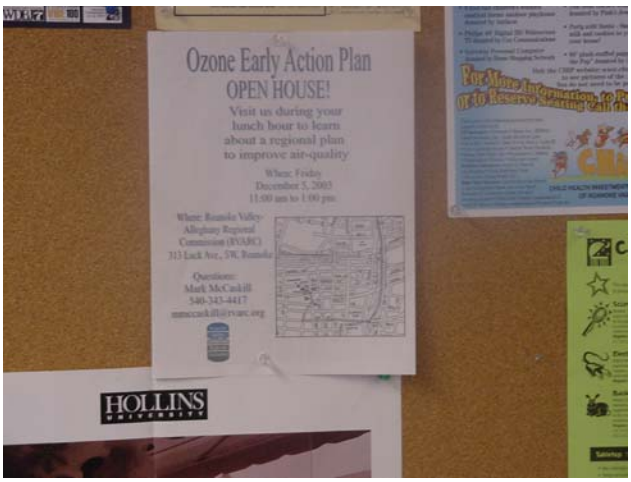
Center (LRV Quality of Life Program – All Day)

- ***February 28, 2003*** – EAP Task Force Meeting – Consultant Presentations and Selection of finalist for contract.
- ***March 28,2003*** – **EAP Task Force Meeting** – Air Quality Modeling Presentation and Discussion – Virginia DEQ
- ***March 10, 2003*** – Oral Presentation to Cosmopolitan Club (Mark McCaskill, Lunch Meeting, Q&A included)
- ***April 10, 2003*** – Oral Presentation to Roanoke Regional Chamber of Commerce Transportation Committee concerning the EAP. (Mark McCaskill, 12:00 pm, Q&A included)
- ***April 23, 2003*** – Oral Presentation to Roanoke Valley Greenways Commission concerning the EAP. (Mark McCaskill, 5:00 pm, Q&A included)
- ***May 1, 2003*** – Media Interview Channel 10 6:00 O'clock News
- ***May 2, 2003*** – **EAP Task Force Meeting** – E.H. Pechan Associates – Draft Strategies Menu Discussion
- **May 15, 2003** Advertisement sent to ***Roanoke Times*** and ***Roanoke Tribune*** for May 29, 2003 public input meeting. Advertisement will run in the Sunday May 18, 2003 Edition (Roanoke Times) and Thursday May 22, 2003 edition (Roanoke Tribune).
- ***May 16, 2003*** – Distribution of Draft Strategies List to "Regional Mayor's and Chairs" meeting (Local Elected and Chief Administrative Officers for the Region)
- ***May 16, 2003*** – Notice of May 29th public meeting in Roanoke Regional Chamber's Monthly Electronic Newsletter "Member Connections"
- ***May 19, 2003*** – **EAP Task Force** teleconference meeting with E.H. Pechan concerning draft strategies.
- ***May 19, 2003*** – May 29th meeting **press release** to following recipients (Joe McKean, WDBJ-TV; Melissa Preas, WSLS-TV; Ray Reed, The Roanoke Times; Chris Kahn, Associated Press; William Little, Fincastle Herald; Claudia Whitworth, The Roanoke Tribune; Jeff Walker, The Vinton Messenger; Meg Hibbert, Salem Times Register; Rick Mattioni, WVTF-FM (Public Radio); Kevin LaRue, WFIR-FM (Roanoke's News Radio)
- ***May 27, 2003*** – Retransmission of above press release
- ***May 29, 2003*** – Interview with Dan Heyman WVTF News concerning public meeting
- ***May 29, 2003*** – Article published in Roanoke Times concerning public meeting (see file)

Roanoke Clean Air Plan

- ***May 29, 2003*** – Public Meeting Roanoke County Headquarters Library (28 Attendees) – Public comments cataloged and transmitted to consultant (E.H. Pechan) for revision of draft strategies list.
- ***June 25, 2003*** – Isak Howell (The Roanoke Times) requests the list of potential strategies to do an Ozone related story.
- ***June 26, 2003*** – Isak Howell story appears in The Roanoke Times and mentions the Ozone EAP and public participation.
- ***July 30, 2003*** – Ozone EAP featured in July 29, 2003 edition of "Legislative Connection" email distributed by Roanoke Regional Chamber of Commerce.
- ***August 8, 2003*** – Ozone EAP Task Force meeting. Initial "Voting" on strategies.
- **SEPTEMBER** – Article featuring Ozone EAP process and the Roanoke Valley's participation featured in the National Association of Development Organizations' (NADO) "Economic Development Digest" September Edition – Kelly Novak Author

- ***September 4, 2003*** – Ozone EAP Task Force meeting and establishment of "subcommittees" to evaluate strategies.
- ***September – November,*** 2003 subcommittee meetings.
- ***November 14, 2003*** – Ozone EAP Task Force Meeting.
- ***November 26, 2003*** – Press Release to announce December 5, 2003 EAP Open House
- ***November 30, 2003*** – Advertisement of December 5, 2003 in *Roanoke Times*
- ***December 1, 2003*** – Notices placed at City of Roanoke Main, Gainsboro, Jackson, Melrose and Williamson Road Library Branches.
- ***December 2, 2003*** – City of Roanoke Environmental Information Officer placed November 26 Press Release in the City's "My Roanoke" email newsletter.
- ***December 2, 2003 –*** Notices announcing Open House placed at Harrison Museum of African American Culture as



well as Refugee & Immigration Services.

- ***December 5, 2003 –*** Ozone Open House 11:00 am to 1:00 pm.
- ***December 5, 2003 –*** Ozone Task force meeting.
- ***January 11, 2004 –*** Legal advertisement in "Roanoke Times" announcing January 20, 2004 Public Hearing"
- ***January 18, 2004 –*** Follow-up legal advertisement in "Roanoke Times" announcing January 20, 2004 Public Hearing"
- ***January 19, 2004 –*** Presentation to Regional Chamber of Commerce concerning Ozone EAP.
- ***January 20, 2004 –*** Ozone EAP Draft Public Hearing.
- ***January 21, 2004 –*** Interview with WVTF Public Radio for broadcast.
- ***January 22, 2004 –*** Interview with News 7 (CBS) for 5:00 p.m. and 6:00 p.m. news.

- ***January 20, 2004*** – EAP formally adopted by resolution by the Town of Vinton.
- ***January 27, 2004*** – EAP formally adopted by resolution by Roanoke County.
- ***January 29, 2004*** – EAP formally adopted by resolution by the City of Salem
- ***January 20, 2004*** – EAP formally adopted by resolution by the Town of Vinton.
- ***February 17, 2004*** – EAP formally adopted by resolution by the City of Roanoke.
- ***February 24, 2004*** – EAP formally adopted by resolution by the Botetourt County.
- ***February 27, 2004*** - Ozone Task force meeting to discuss modeling progress and results.

3. EMISSION REDUCTION STRATEGIES

This section describes the local control measures that have been adopted and included in the final local Early Action Plan. These measures, when combined with control strategies at the state and federal levels are meant to significantly reduce ozone precursor emissions and bring the Roanoke Valley area into compliance with the 8-hour ozone standard.

A. Local Control Measures

Described below is a summary of the local control strategies in the final Early Action Plan. These control measures are grouped according to the categories and subcommittees established by the Taskforce to evaluate these measures. **A detailed description all these**

potential control measures and projected implementation dates is presented in the local Early Action Plan document.

Heavy Duty Diesel and Diesel Equipment Strategies

#1 – Reduction of locomotive idling and resulting emissions. Through a local voluntary agreement, the Norfolk Southern Railroad Company will implement an internal policy to limit locomotive idling at its facilities/yards in the City of Roanoke. This measure will reduce emissions of both NO_X and fine particulate matter (PM) and will be in addition to emission reductions from federal locomotive controls. A detailed estimate of these reductions is currently under development. This measure was not included in the estimate of EAP emissions reductions or in the air quality modeling exercise.

#2 – Limitation of idling times for local school bus fleets. This measure will involve the expansion of existing school bus idling restrictions to the entire EAP area. An initial estimate of reductions expected from this measure is 0.7 tons/year of NO_X and an undetermined amount of PM.

#3 – Retrofit control technology for 100 Roanoke County school buses. This measure will involve the installation of oxidation catalysts on 100 school buses. An initial estimate of the reductions expected from this measure is 0.3 tons/year of VOCs, 0.07 tons/year of PM, and 1.2 tons/year of Carbon Monoxide (CO). It is likely that the City of Roanoke will also participate in this program which will increase the reduction estimate.

#4 – Purchase and use of bio-diesel compatible solid waste trucks by the City of Roanoke. This measure will involve the conversion of five new garbage trucks to use bio-diesel fuels. An initial estimate of the reductions expected from this measure is approximately 250 kilograms/year of NO_X and 8 kilograms/year of PM.

#5 – Purchase and use of ethanol compatible alternative fuel vehicles by the City of Roanoke. This measure will involve the purchase and use of up to 26 alternatively fueled vehicles. The estimate of reduction from this measure will be developed once the details are determined.

#6 – Purchase of bio-diesel ready trucks by the City of Roanoke. This measure involves the prior and future purchase and use of waste trucks utilizing bio-diesel fuels. The estimate of reduction from this measure will developed once the details are determined.

#7 – Purchase of hybrid vehicles by the City of Roanoke. This measure will involve the purchase and use of up to four hybrid vehicles. The estimate of reduction will depend on the number of vehicles purchased and will be developed once this is determined.

#8 – Purchase of more efficient, low-emission, or alternative fuel vehicles by Roanoke County. A plan is currently being developed by the County for these purchases, and the reductions anticipated will be calculated once this plan is completed and approved.

#10 – Educational and training program of vehicle use by Roanoke County. The County has implemented an educational program on “effective environmental driving”. Reductions will be estimated based on observed fuel use reductions achieved after the completion of the training.

Air Quality Action Day, Public Education, and Stationary Source Strategies

The center piece of the proposed local control plan will be a comprehensive air quality (ozone) action day program which will require restrictions on ozone precursor pollutant producing activities by state/local governments and encourage voluntary restrictions of similar activities on local businesses and the public. The DEQ already issues local forecast of ozone levels for the Roanoke area during the typical ozone season. An enhanced forecasting tool for the Roanoke area is currently under development and will be used as part of this action day program. Another key component of this program will be an ongoing public awareness and education program to notify and inform the public on action they can take to reduce their individual impact on the area's air quality. To facilitate this program, regional and local air quality coordinators will be assigned to implement and coordinate the efforts involved. The main components of the air quality action day program, along with several longer-term support activities are as follows:

#11 – Air quality action day program (hybrid approach). This program will consist of two main efforts. First, local governments have made commitments to limit or ban certain ozone precursor forming activities during predicted high ozone days. These activities will include landscaping, pesticide application, refueling vehicles, and use of other solvent based products. The State Department of Transportation, which performs many of the same activities in the local area, has also made this commitment. Secondly, voluntary restrictions on these same activities will be requested of local business and the general public during potential high ozone days. At the same time businesses and the public would be encouraged to make alternative commuter choices such as car or vanpools, public transit, telecommuting, and trip-chaining. As a contingency measure, if ozone exceedances continue or a shortfall in emission reductions is identified after plan implementation, the area will reevaluate and determine if additional mandatory restrictions are warranted.

#12 – Early morning or late evening refueling of vehicles. This measure will also have a mandatory and voluntary component. Local governments and state agencies will restrict vehicle refueling during high ozone days to the evening. At the same time, local gasoline distributors will be encouraged to provide incentives to the public to refuel early or late in the day during high ozone days.

#13 – Promotion of alternative fuel vehicles. As part of the public awareness and education program, the environmental and economic benefits of alternative fuel vehicles will be identified as encouragement to purchase these vehicles.

#14 – Media and public relations concerning air quality action days. A comprehensive and year-round media and public relations program will be implemented and coordinated by a regional air quality and ride-sharing coordinator and assisted by local coordinators.

#15 – Public transit incentives (transit passes) for college students and local employers. This will involve the purchase of at least 300 transit passes to be distributed to students and employers for use during high ozone days or year-round.

#16 – Bicycle infrastructure and amenities. This program will encourage bicycle use during high ozone days and encourage the expansion of bicycle related infrastructure.

#17 – School (K-12 and adult education) based public education. This will involve expansion of an ongoing educational program to identify air quality issues and individual action that can be taken to reduce ozone precursor emissions at area primary and secondary schools.

#18 – Tree canopy/ urban forestry. This will involve an area-wide comprehensive tree- planting program with the goal of reducing concentrations of certain pollutants including ozone and NO_X .

#19 – Roanoke to Blacksburg public transit. Establishment of a bus route from Roanoke to Blacksburg (where Virginia Tech is located), and point in between. This will reduce vehicle trips within the compact area and produce a 0.9 ton/year reduction of NO_X and 2 ton/year reduction of VOC.

Although it is very difficult to estimate ozone precursor emission reduction that will be achieved from these individual actions, it is not unreasonable to assume that all these actions combined will have the desired impact of reducing emissions to some extent. Through the evaluation of these types of programs in other areas, a general range of emission reductions that can be expected from the combination of these types of voluntary measures of 3% from affected activities and emissions. Therefore, an initial estimate of a 3% reduction in ozone precursor emissions from these activities in the Roanoke area has been used to estimate the reductions from the combination of these measures during predicted high ozone days. For those activities that have a state/local mandatory component, a 5% reduction estimate has been used for the purpose of determining emissions reductions. In total, this equates to a daily reduction of 1 ton/day of VOC and 1.5 tons/day of NO_X.

Lawn and Garden Equipment Strategies

#20 – Replacement of gasoline golf carts with electric carts. This measure will involve obtaining commitments from up to four local golf courses to replace some or all of their golf carts with electric carts. Replacement of 100 gas carts with electric carts would produce a VOC reduction of 25 tons over three years.

#21 – Gasoline powered lawnmower buyback program. This will involve providing incentives for the public to trade in gasoline powered lawnmowers for zero emissions equipment (electric or manual).

#22 & #23 – Restrictions on the use of lawn and garden equipment. This would be another two-part control measure with mandatory restrictions the use of gasoline powered lawn and garden equipment for state/local governments and voluntary restrictions on local businesses and the public, during predicted high ozone days. Assuming a 5% percent reduction in lawn & garden emissions from this measure, VOC emissions would be reduced by 0.2 tons/day.

#24 – Open burning bans/restrictions. Several jurisdictions have adopted local rules restricting or prohibiting open burning. The other EAP jurisdictions will ban or restrict open burning during

predicted high ozone days. This will reduce area emissions by 0.56 tons/day of VOC, and 0.24 tons/day of NO_X.

B. State & Federal Control Measures

In addition to the local control measures identified in the preceding discussion, there are several state and federal actions that have or will produce substantial ozone precursor emission reductions both inside and outside of the Roanoke Valley area. These reductions are aimed at reducing local emissions and the movement (transport) of pollution into the area. These measures, when combined with the local control program, are expected to lower area ozone concentrations to the level at or below the ozone standard.

At the state level, several significant actions have been taken. First, in response to EPA's call for the reduction of NO_X emissions from large combustion sources (i.e., the NO_X SIP Call), the state has adopted and will implement a program to significantly reduce emissions of NO_X as part of a regional program to reduce ozone transport. This program alone is predicted to reduce ozone forming NO_X emissions by up to 30,000 tons per ozone season in Virginia. Secondly, the state opted into the National Low Emission Vehicle program that began to require less polluting vehicles in the state, beginning in 1999. Also in 1999, Stage I vapor recovery systems were required at gasoline stations in the Roanoke area which has reduced gas station VOC emissions by 1.7 tons/day. To further address local emissions, the state has recently adopted Reasonably Available Control Technology (RACT) controls for industries in the area, to further reduce the local contribution to ozone formation. The emission reduction expected from RACT in the area is 1.1 tons of VOC and 1.5 tons/day of NO_X. Compliance with the RACT rule will be required by the end of 2005.

On the federal level, numerous EPA programs have been or will be implemented to reduce ozone pollution. These programs cover all the major categories of ozone generating pollutants and are designed to assist many areas to come into compliance with the federal ozone standard. A brief description of these measures is provided below:

Stationary & Area Source Controls: In addition NO_X SIP Call program, the EPA has developed a number of control programs to address smaller "area" sources of emissions that are significant contributors to ozone formation. These programs reduce emissions from such sources as industrial/architectural paints, vehicle paints, metal cleaning products, and selected consumer products.

Motor Vehicle Controls: The EPA continues to make significant progress in reducing motor vehicle emissions. Several federal programs have established more stringent engine and associated vehicle standards on cars, sport utility vehicles, and large trucks. These programs combined are expected to produce progressively larger emission reductions over the next twenty years as new vehicles replace older ones.

Non-Road Vehicle & Equipment Standards: The category of "non-road" sources that covers everything from lawn & garden equipment to aircraft, has become a significant source of air pollutant emissions. In response, EPA has adopted a series of control measures to address these sources. These programs include engine emission standards for lawn & garden equipment, construction equipment, boat engines, and locomotives.

All these measure have been developed to address both the creation of ozone producing emissions in the local area, as well as reducing the movement of ozone into the area as a comprehensive approach to reducing ozone levels.

4. AIR QUALITY TECHNICAL SUPPORT ACTIVITIES

A. Background

Air Quality analyses are used to simulate the combination of meteorology, emissions, and atmospheric chemistry that promote ozone formation and higher ambient concentrations in a given area. Once a representative scenario, or episode conducive to ozone formation, based on an actual observed ozone event is selected and validated, various emission reduction strategies can be tested to predict whether they would succeed in reducing ozone and attaining the ozone standard. The major steps involved in photochemical modeling is as follows:

- Selection of type and geographic scale of photochemical model
- Selection of representative ozone episode(s)
- Base case episode modeling and validation
- Future year projection and attainment demonstration modeling

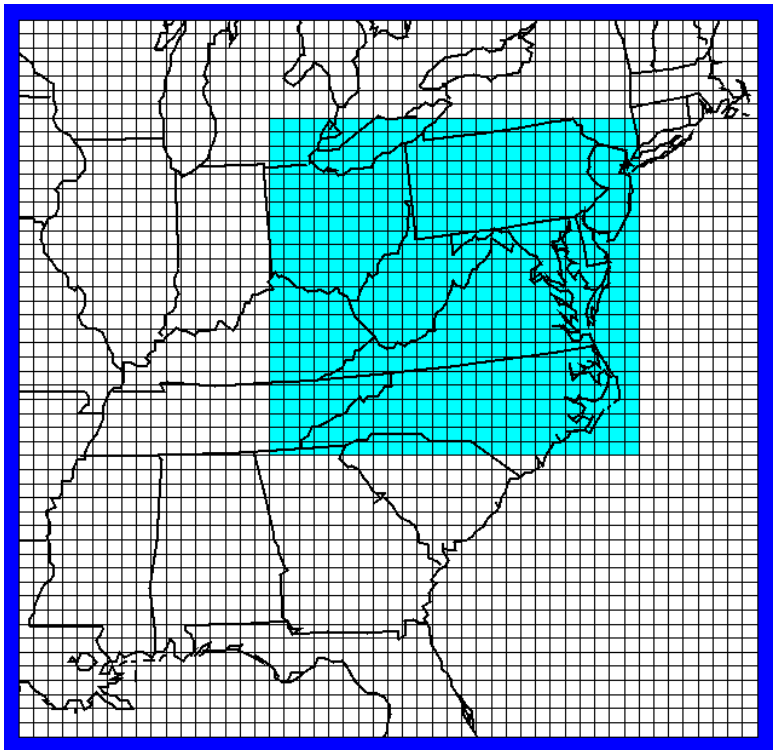
B. Model and Domain Selection

Due to the regional nature of ground level formation and transport that is prevalent in the Eastern United States, combined with the reasonable assumption the early action area is impacted by ozone transport, a regional photochemical modeling exercise has been selected for this project. This selection will allow for the evaluation of the impact of transport on the study area, as well as the impact of regional and national control strategies in reducing ozone transport into these areas.

The initial photochemical model selected for this purpose in EPA's MODELS3/CMAQ model that is EPA's latest modeling platform for such analyses. The meteorological inputs required to run the model will be developed using the MM5 meteorology model, and the emissions inputs will be developed using the SMOKE emissions preprocessor model. The purpose of these model data input preprocessors is to temporally and spatially allocate these inputs to a grid system used by the photochemical model to recreate the atmospheric interaction of all these factors in promoting ozone formation.

Due the need to model a larger region for ozone transport assessment, a regional domain that covers a large portion of the Mid-Atlantic States has been chosen to support the early action modeling. This domain has been used in previous analyses by the State to assess transport and the regional effect of emission reductions. The domain will consist of a series of descending grid cells from 36 kilometers (km) at the edges of the domain, to 12 km in the Mid-Atlantic area. A local 4 km exercise for the project area may be added later to provide further resolution. In this way the resolution of the model and modeling results will be the highest in and around the early action planning areas. This modeling domain is shown in Figure 3.

Figure 3: Early Action Modeling Domain of 36 km & 12 km Resolution



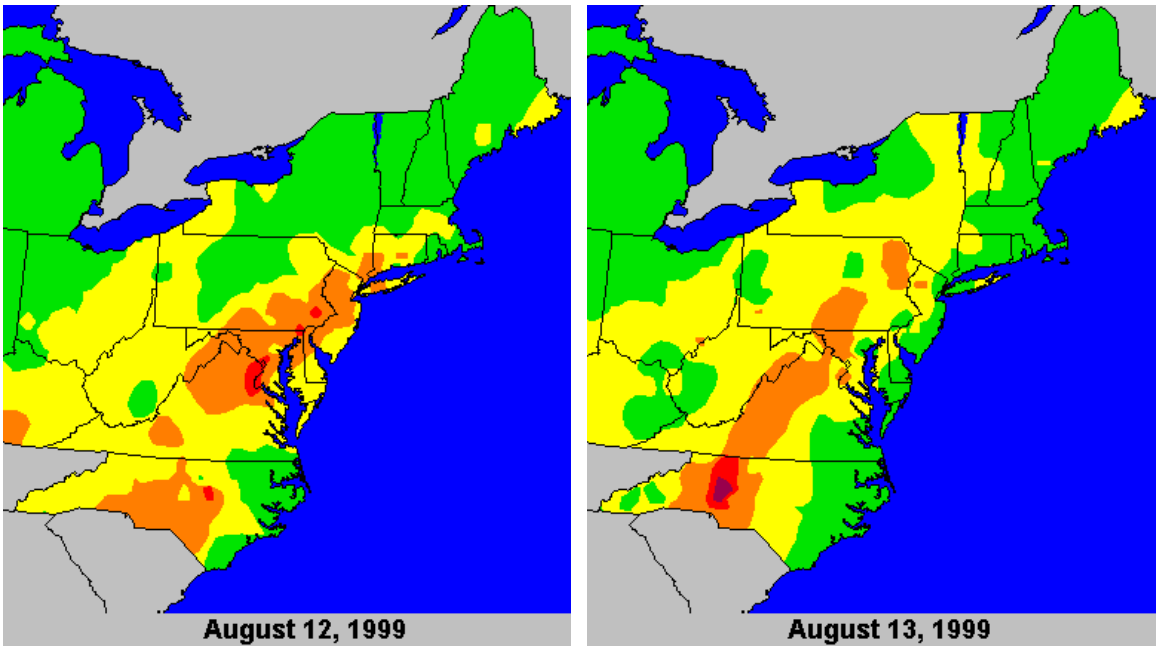
C. Episode Selection

One of the key aspects of a modeling analysis of a particular area and air pollution problem is to select one or more representative episodes to model. The selection process should reflect one or more of the prevailing meteorological and emissions conditions that produce higher levels of ozone in the subject area. An additional consideration for this project is that EPA guidance requires that the baseline emission inventory and subsequent episode(s) selected for an EAP are no older than 1999. Finally, since three states are developing plans in the same general area, an episode common to all three was selected.

The result of this process produced an ozone episode that occurred on August 12th and 13th in 1999. This episode was selected mainly because exceedences of the ozone standard were observed at all the area monitors involved in this effort (including Roanoke), during this period. This episode also involved the transport of ozone into Virginia from both the West and Southwest. To adequately simulate the events leading up and following this episode, a 10 day period from August 8th to the 18th will be modeled. After the completion of this modeling exercise, an additional episode, probably in 2002, will be selected and modeled to retest and confirm the results of the initial modeling and to begin the analysis of other nonattainment areas

in Virginia. The EPA ozone maps of the August 12th & 13th, 1999 episode are shown in Figure 4.

Figure 4: The Ozone Episode of August 12th & 13th, 1999



The episode meteorological conditions of August 12th and 13th in 1999 are listed below.

August 12th

The surface weather map on the morning of August 12th indicated a trough of low pressure extending from coastal New England, through the Delmarva region into central Virginia. South and east of the trough, surface winds were generally from the southeast and higher dew point temperatures, indicative of maritime air. West of the trough, surface winds were calm and variable with lower dew point temperatures, indicative of ozone–conducive continental air. Haze was reported over a large area from Maine into Tennessee and Georgia. Surface winds remained light into the afternoon. Surface and 1500 meter 48-hour back trajectories for Roanoke ending that afternoon indicated that air passed over the Ohio River Valley and West Virginia. The evening surface weather map indicated the trough of low pressure separating maritime from continental air persisted from New England southwestward through Maryland and Richmond, extending into central North Carolina. Maximum temperatures east of the trough were around 90 degrees. West of the trough, high temperatures reached into the low to mid 90s.

August 13th

The surface weather map on the morning of August 13th indicated the trough extended from Washington, D.C. through central Virginia into central North and South Carolina. Again, higher dew point temperatures and southerly winds east of the trough indicated maritime air. Lower dew points and calm winds west of the trough indicated the presence of a continental air mass. Forty- eight hour surface and 1500 back trajectories for Roanoke ending that afternoon originated from the Great Smokey Mountains region of northeastern Tennessee and north central Tennessee, respectively. The surface

trough separating the maritime air from the continental air persisted into the evening. High temperatures reached the mid-to-upper 90s in the region.

D. Emissions Inventory and Control Measures Summary

This section presents the various air pollutant emissions inventories developed to support the Roanoke Valley Ozone Early Action Plan. Typical daily inventories during the ozone season, expressed in tons per day, have been developed for this purpose. These inventories include baseline, interim, and future projection years to determine historic, current, and future emissions levels as part of the air quality plan development process. The major source categories used to present this inventory data are:

- **Stationary Point Sources -** Large utility and industrial facilities with significant individual emissions.
- **Mobile Sources -** Motor vehicles operated on public roads such as interstates, freeways, and local roads.
- **Area Sources -** Small individual sources of emissions such as gasoline distribution and marketing, solvent usage, and others.
- **Non-road Mobile Sources -** Motor vehicles and equipment such as lawn and garden tools, construction equipment, locomotives, and aircraft.

The first inventory developed for this process was the baseline emissions inventory. 1999 was selected for this purpose, since the ozone episode being modeled to support the EAP process occurred during the summer of 1999. This inventory serves as a baseline estimate of area emissions during the time when the modeled episode occurred. This inventory reflects actual emissions in the area during this year.

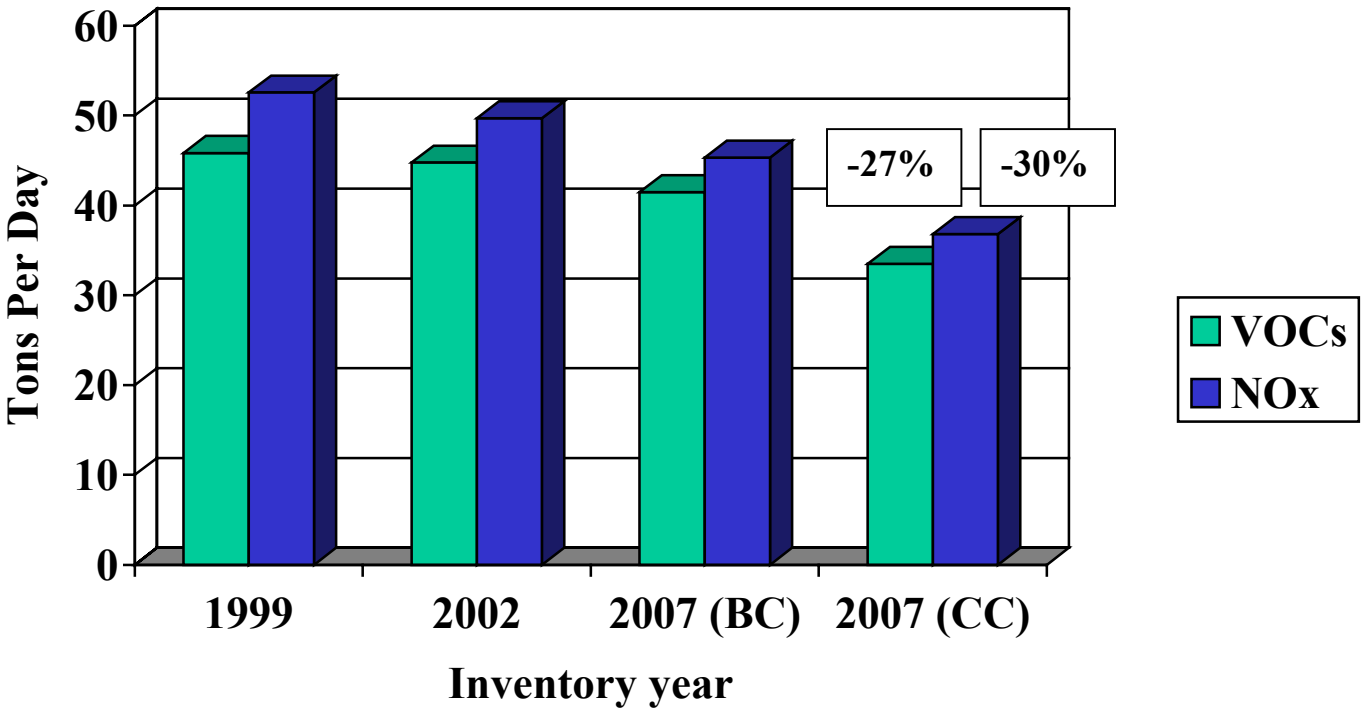
The second inventory to be developed was the interim (current) year emissions inventory. 2002 was selected for this purpose because this is the latest year for which a comprehensive inventory for all sources has been developed. This inventory serves to represent existing emissions levels in the local area and can also be compared to the baseline inventory to determine emissions trends. This inventory also reflects actual emissions in the area during this year.

The last two inventories developed for this process are predicted future year emissions inventories that represent base case (uncontrolled) and control case (controlled) emissions scenarios. The year selected for this purpose was 2007, which is the year by which the area must come into compliance with the ozone standard. The future base case inventory represents uncontrolled emissions projected with appropriate growth factors. The exception to this is the mobile source inventory that contains some reductions associated with previous federal/state motor vehicle controls. The future control case inventory represents the application of all control expected to be implemented in the local area by the attainment year. This includes the local impact of additional federal/state control measures, and the local control measures selected as part of the EAP process. A summary table and bar graph of these emissions inventories is presented in Figure 5. The various emissions inventories developed as part of EAP process are presented on Pages 21 to 29. A table summarizing all emissions

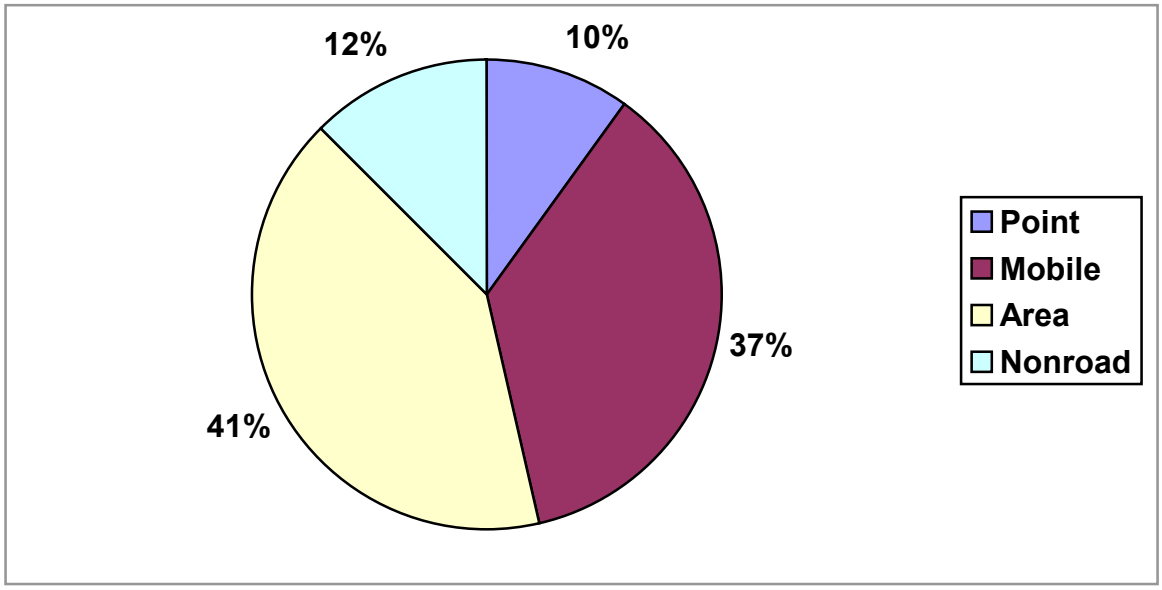
control measures and predicted reductions from 2007 uncontrolled levels is presented on Page 30.

Figure 5: Roanoke Valley EAP Emissions Inventory Summary

Source Category	1999 (Baseline)	2002 (Interim)	2007 (Base Case)	2007 (Control Case)
Volatile Organic Compound (VOC) Emissions in tons/day				
Point Sources	4.551	3.518	3.927	3.927
Area Sources	18.845	19.360	20.044	15.300
Non-road Sources	5.683	5.726	5.803	3.804
Mobile Sources	16.770	16.188	11.732	10.489
Totals:	**45.849**	**44.792**	**41.506**	**33.520**
Oxides of Nitrogen (NO_X) Emissions in tons/day				
Point Sources	9.312	7.231	7.876	6.343
Area Sources	5.091	5.254	5.531	5.293
Non-road Sources	7.807	8.049	8.480	6.285
Mobile Sources	30.358	29.166	23.436	18.897
Totals:	**52.568**	**49.700**	**45.323**	**36.818**

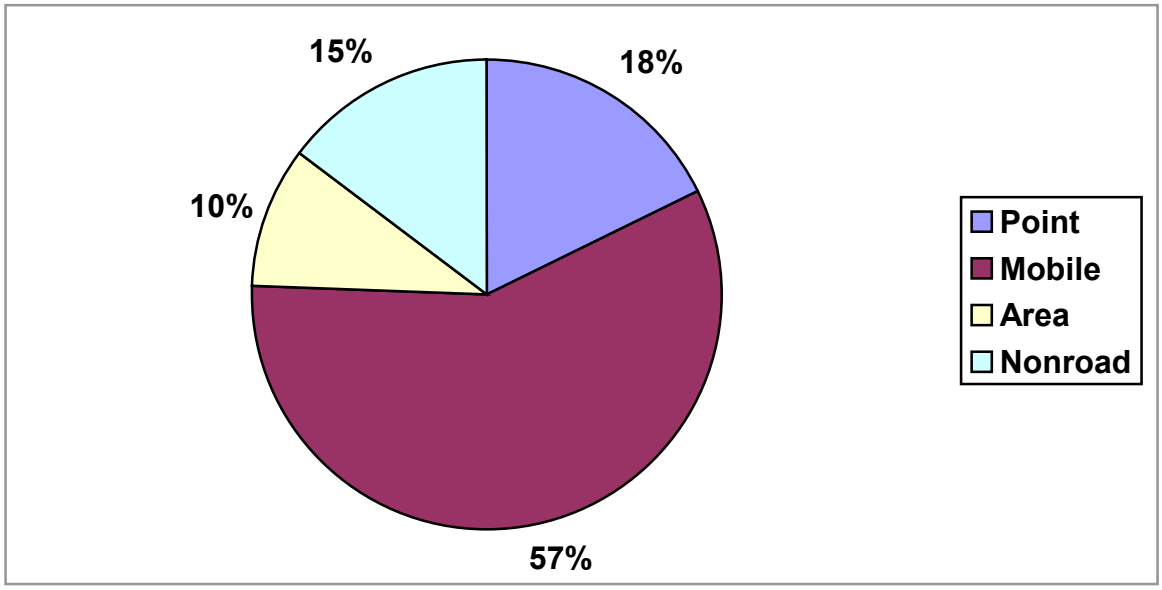


1999 Baseline Ozone Season Daily Emissions of Volatile Organic Compounds (VOC)



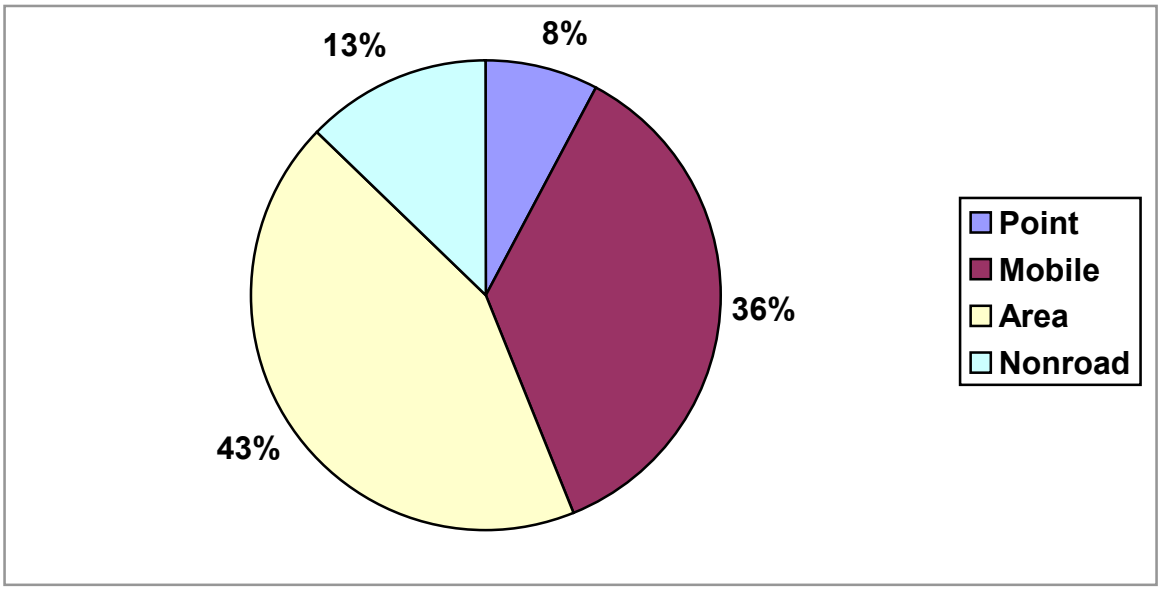
Summary of the Roanoke Valley Baseline VOC Emissions Inventory for Calendar Year 1999	
Major Source Categories	Emissions (tons/day)
Major Stationary Point Sources	
28 individual facilities (Botetourt: 7, Roanoke Co.: 12, Roanoke City: 5, Salem City: 4) - Description: Includes cement production, metal works, minerals production, gas terminals.	4.551 tpd
On-Road Mobile Sources	
Motor Vehicles on Public Roads – **Description**: local and through traffic on the I-81 corridor. Large percentage of heavy-duty diesel trucks. Also, vehicle traffic on all other public roads from major arterials to local roads.	16.770 tpd
Area Sources	
Use of Solvent-based Products – Description: paints, cleaners, consumer products, & others.	11.229 tpd
Gasoline Distribution & Marketing – Description: Gasoline storage & transfer operation at terminals and service stations	5.579 tpd
All Others – description: Open burning, landfills, & others	2.037 tpd
Non-Road Mobile Sources	
Non-road Equipment – Description: lawn & garden, construction, recreational vehicles.	5.490 tpd
All Others – Description: Locomotives, aircraft, boats	0.193 tpd
Total	**45.849 tpd**

1999 Baseline Ozone Season Daily Emissions of Oxides of Nitrogen (NO_X)



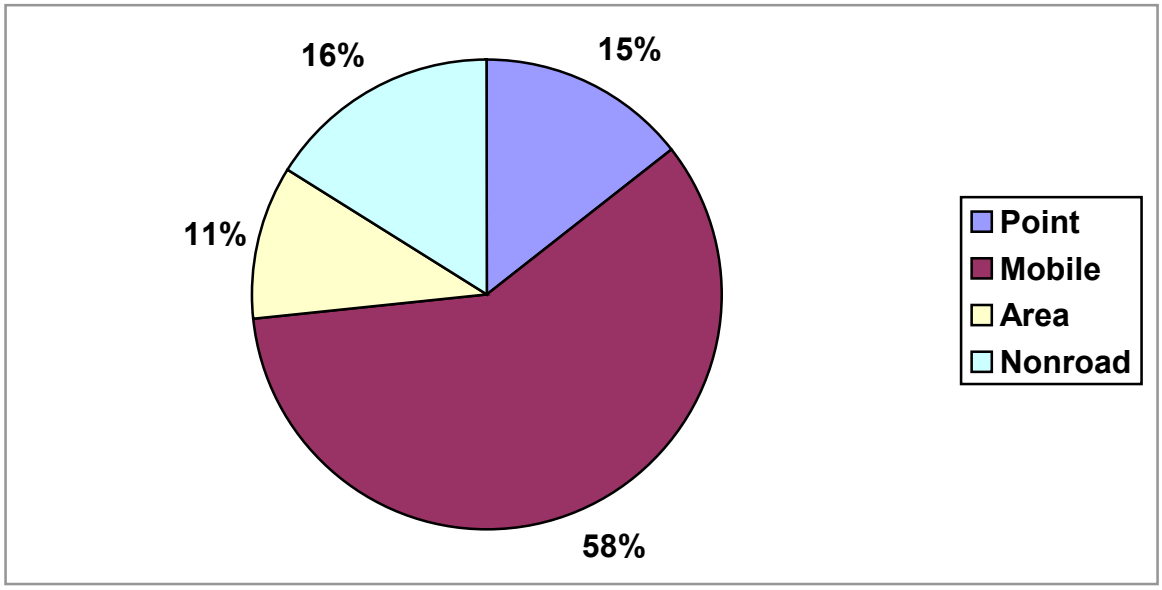
Summary of the Roanoke Valley Baseline NO_X Emissions Inventory for Calendar Year 1999	
Major Source Categories	Emissions (tons/day)
Major Stationary Point Sources	
28 individual facilities (Botetourt: 7, Roanoke Co.: 12, Roanoke City: 5, Salem City: 4) - Description: Includes cement production, metal works, minerals production, gas terminals.	9.312 tpd
On-Road Mobile Sources	
Motor Vehicles on Public Roads - **Description**: local and through traffic on the I-81 corridor. Large percentage of heavy-duty diesel trucks. Also, vehicle traffic on all other public roads from major arterials to local roads.	30.358 tpd
Area Sources	
Fuel Consumption – Description: Fuel consumption for heating, cooling, and other purposes in all sectors.	4.585 tpd
All Others – description: Open burning, landfills, & others	0.506 tpd
Non-Road Mobile Sources	
Non-road Equipment – Description: lawn & garden, construction, recreational vehicles.	5.450 tpd
All Others – Description: Locomotives, aircraft, boats.	2.357 tpd
Total	**52.568 tpd**

2002 Interim Ozone Season Daily Emissions of Volatile Organic Compounds (VOC)



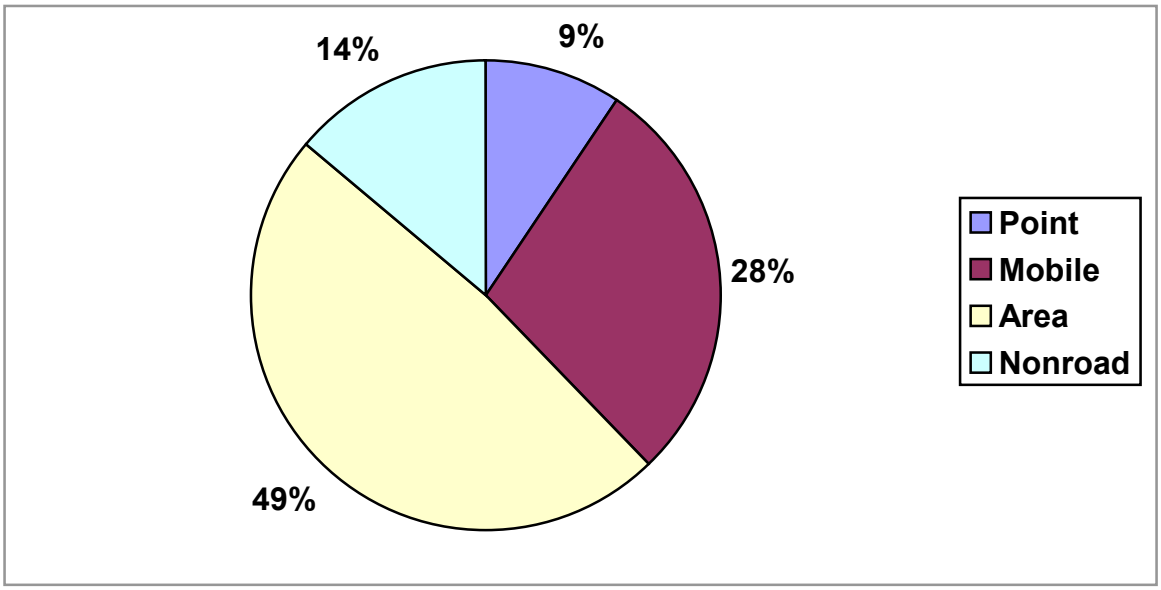
Summary of the Roanoke Valley Interim VOC Emissions Inventory for Calendar Year 2002	
Major Source Categories	Emissions (tons/day)
Major Stationary Point Sources	
28 individual facilities (Botetourt: 7, Roanoke Co.: 12, Roanoke City: 5, Salem City: 4) - Description: Includes cement production, metal works, minerals production, gas terminals.	3.518 tpd
On-Road Mobile Sources	
Motor Vehicles on Public Roads – **Description**: local and through traffic on the I-81 corridor. Large percentage of heavy-duty diesel trucks. Also, vehicle traffic on all other public roads from major arterials to local roads.	16.188 tpd
Area Sources	
Use of Solvent-based Products – Description: paints, cleaners, consumer products, & others.	11.426 tpd
Gasoline Distribution & Marketing – Description: Gasoline storage & transfer operation at terminals and service stations	5.808 tpd
All Others – description: Open burning, landfills, & others	2.126 tpd
Non-Road Mobile Sources	
Non-road Equipment – Description: lawn & garden, construction, recreational vehicles.	5.524 tpd
All Others – Description: Locomotives, aircraft, boats	0.202 tpd
Total	**44.792 tpd**

2002 Baseline Ozone Season Daily Emissions of Oxides of Nitrogen (NO_X)



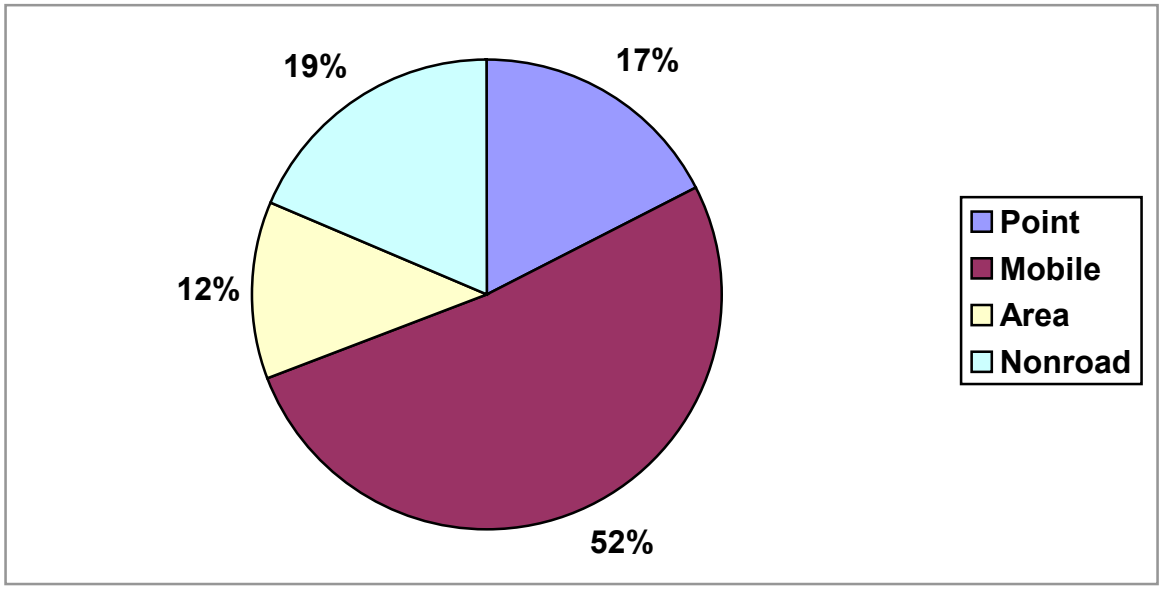
Summary of the Roanoke Valley Interim NO_X Emissions Inventory for Calendar Year 2002	
Major Source Categories	Emissions (tons/day)
Major Stationary Point Sources	
28 individual facilities (Botetourt: 7, Roanoke Co.: 12, Roanoke City: 5, Salem City: 4) - Description: Includes cement production, metal works, minerals production, gas terminals.	7.231 tpd
On-Road Mobile Sources	
Motor Vehicles on Public Roads - **Description**: local and through traffic on the I-81 corridor. Large percentage of heavy-duty diesel trucks. Also, vehicle traffic on all other public roads from major arterials to local roads.	29.166 tpd
Area Sources	
Fuel Consumption – Description: Fuel consumption for heating, cooling, and other purposes in all sectors.	4.724 tpd
All Others – description: Open burning, landfills, & others	0.530 tpd
Non-Road Mobile Sources	
Non-road Equipment – Description: lawn & garden, construction, recreational vehicles.	5.553 tpd
All Others – Description: Locomotives, aircraft, boats.	2.496 tpd
Total	**49.700 tpd**

2007 Base Case Ozone Season Daily Emissions of Volatile Organic Compounds (VOC)



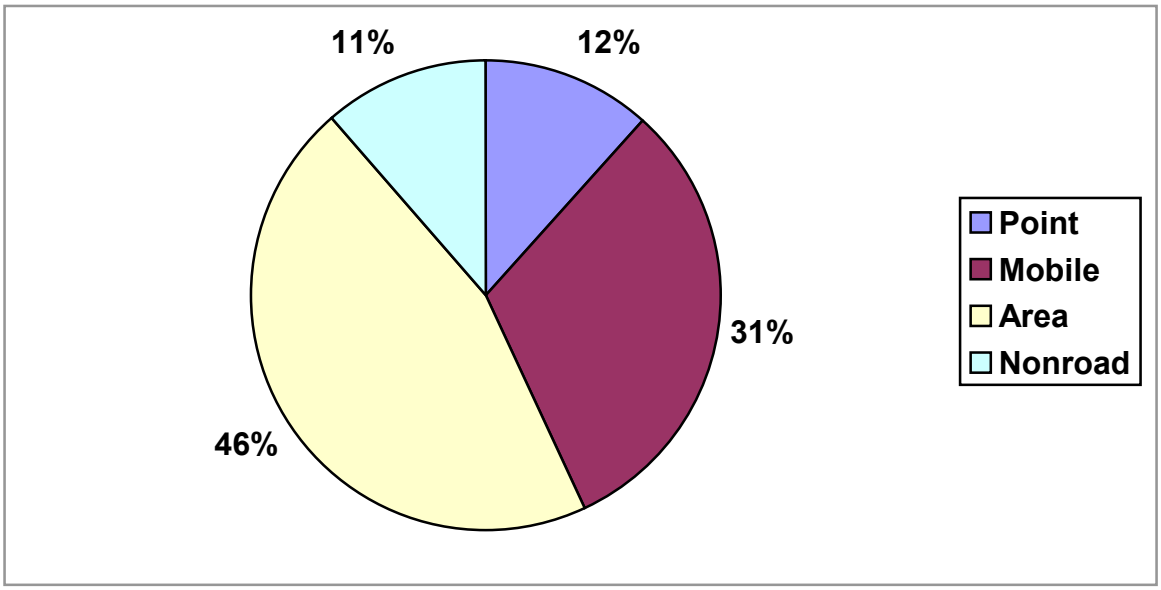
Summary of the Roanoke Valley Base Case VOC Emissions Inventory for Calendar Year 2007	
Major Source Categories	Emissions (tons/day)
Major Stationary Point Sources	
28 individual facilities (Botetourt: 7, Roanoke Co.: 12, Roanoke City: 5, Salem City: 4) - Description: Includes cement production, metal works, minerals production, gas terminals.	3.927 tpd
On-Road Mobile Sources	
Motor Vehicles on Public Roads – **Description**: local and through traffic on the I-81 corridor. Large percentage of heavy-duty diesel trucks. Also, vehicle traffic on all other public roads from major arterials to local roads.	11.732 tpd
Area Sources	
Use of Solvent-based Products – Description: paints, cleaners, consumer products, & others.	11.569 tpd
Gasoline Distribution & Marketing – Description: Gasoline storage & transfer operation at terminals and service stations	6.211 tpd
All Others – description: Open burning, landfills, & others	2.264 tpd
Non-Road Mobile Sources	
Non-road Equipment – Description: lawn & garden, construction, recreational vehicles.	5.586 tpd
All Others – Description: Locomotives, aircraft, boats	0.217 tpd
Total	**41.506 tpd**

2007 Base Case Ozone Season Daily Emissions of Oxides of Nitrogen (NO_X)



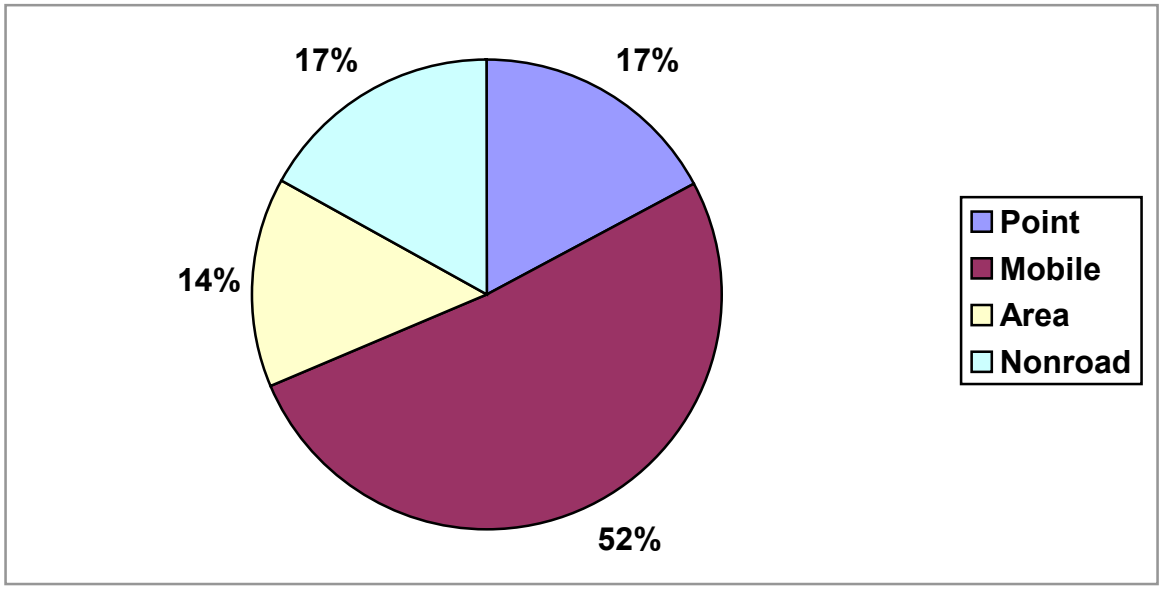
Summary of the Northern Shenandoah Valley Base Case NO_X Emissions Inventory for Calendar Year 2007	
Major Source Categories	Emissions (tons/day)
Major Stationary Point Sources	
28 individual facilities (Botetourt: 7, Roanoke Co.: 12, Roanoke City: 5, Salem City: 4) - Description: Includes cement production, metal works, minerals production, gas terminals.	7.876 tpd
On-Road Mobile Sources	
Motor Vehicles on Public Roads - **Description**: local and through traffic on the I-81 corridor. Large percentage of heavy-duty diesel trucks. Also, vehicle traffic on all other public roads from major arterials to local roads.	23.436 tpd
Area Sources	
Fuel Consumption – Description: Fuel consumption for heating, cooling, and other purposes in all sectors.	4.966 tpd
All Others – description: Open burning, landfills, & others	0.565 tpd
Non-Road Mobile Sources	
Non-road Equipment – Description: lawn & garden, construction, recreational vehicles.	5.733 tpd
All Others – Description: Locomotives, aircraft, boats	2.746 tpd
Total	**45.323 tpd**

2007 Control Case Ozone Season Daily Emissions of Volatile Organic Compounds (VOC)



Summary of the Roanoke Valley Control Case VOC Emissions Inventory for Calendar Year 2007	
Major Source Categories	Emissions (tons/day)
Major Stationary Point Sources	
28 individual facilities (Botetourt: 7, Roanoke Co.: 12, Roanoke City: 5, Salem City: 4) - Description: Includes cement production, metal works, minerals production, gas terminals.	3.927 tpd
On-Road Mobile Sources	
Motor Vehicles on Public Roads – **Description**: local and through traffic on the I-81 corridor. Large percentage of heavy-duty diesel trucks. Also, vehicle traffic on all other public roads from major arterials to local roads.	10.489 tpd
Area Sources	
Use of Solvent-based Products – Description: paints, cleaners, consumer products, & others.	9.317 tpd
Gasoline Distribution & Marketing – Description: Gasoline storage & transfer operation at terminals and service stations	4.283 tpd
All Others – description: Open burning, landfills, & others	1.700 tpd
Non-Road Mobile Sources	
Non-road Equipment – Description: lawn & garden, construction, recreational vehicles.	3.602 tpd
All Others – Description: Locomotives, aircraft, boats	0.202 tpd
Total	**33.520 tpd**

2007 Baseline Ozone Season Daily Emissions of Oxides of Nitrogen (NO_X)



Summary of the Roanoke Valley Control Case NO_X Emissions Inventory for Calendar Year 2007	
Major Source Categories	Emissions (tons/day)
Major Stationary Point Sources	
28 individual facilities (Botetourt: 7, Roanoke Co.: 12, Roanoke City: 5, Salem City: 4) - Description: Includes cement production, metal works, minerals production, gas terminals.	6.343 tpd
On-Road Mobile Sources	
Motor Vehicles on Public Roads - **Description**: local and through traffic on the I-81 corridor. Large percentage of heavy-duty diesel trucks. Also, vehicle traffic on all other public roads from major arterials to local roads.	18.897 tpd
Area Sources	
Fuel Consumption – Description: Fuel consumption for heating, cooling, and other purposes in all sectors.	4.966 tpd
All Others – description: Open burning, landfills, & others	0.327 tpd
Non-Road Mobile Sources	
Non-road Equipment – Description: lawn & garden, construction, recreational vehicles.	4.650 tpd
All Others – Description: Locomotives, aircraft, boats	1.634 tpd
Total	**36.818 tpd**

Control Measures & Estimated Emissions Reductions (From Uncontrolled Levels in 2007)

Emissions Control Measures	VOC (tpd)	NO_X (tpd)
State/Federal Area Source Controls		
Stage I Vapor Recovery	1.756	0.000
Architectural & Industrial Paints	0.372	0.000
Consumer Products	0.178	0.000
Metal Cleaning Solvents	0.163	0.000
Motor Vehicle Refinishing	0.158	0.000
Cutback Asphalt	0.005	0.000
Subtotals:	**2.632**	**0.000**
Federal Non-road Source Controls		
Small Gasoline Engine Standards	1.851	0.112
Diesel Engine Standards	0.000	0.951
Locomotive Engine Standards	0.000	1.112
Large Gasoline Engine Standards	0.015	0.004
Recreational Engine Standards	0.015	0.000
Subtotals:	**1.881**	**2.179**
Federal Mobile Source Controls		
Previous Motor Vehicle Standards (from 1999 levels)	5.038	6.922
Tier 2 Vehicle Standards	0.917	3.799
Heavy Duty Diesel Standards	0.001	0.156
Subtotals:	**5.956**	**10.877**
Local Area Early Action Plan Controls		
Existing Source CTG RACT Controls *	1.098	1.533
Ozone Action Days Program **	0.918	0.611
Open Burning Restrictions (Area)	0.564	0.238
All Other Local Programs (All Sources)	0.001	0.001
Subtotals:	**2.581**	**2.383**
TOTALS:	**13.050**	**17.618**

* **Implemented by State Regulation**
** **To be supported by State Ozone Forecasts**

E. Base Case Modeling

A 1997 episode was originally selected to support the development of the early action plan since emissions and meteorological data were readily available and quality assured. However, subsequent to this decision, EPA EAP guidance required that inventories and episodes no older than 1999 had to be used in this effort. As a result, the episode described above as been selected to support the air quality planning effort. However, this change in the modeling plan and episode has resulted in a change to the modeling project schedule as well.

DEQ has obtained the necessary meteorological data for the 1999 episode and has successfully completed the processing of the data through the MM5 meteorological model. Several MM5 runs were required to adequately simulate the relatively complex meteorological conditions that existed during the selected ozone episode as previously described. Figures 6 and 7 provide selected results of the meteorological modeling used as input into the regional air quality model.

Figure 6: Meteorological Modeling – Selected Results for Temperature and Winds

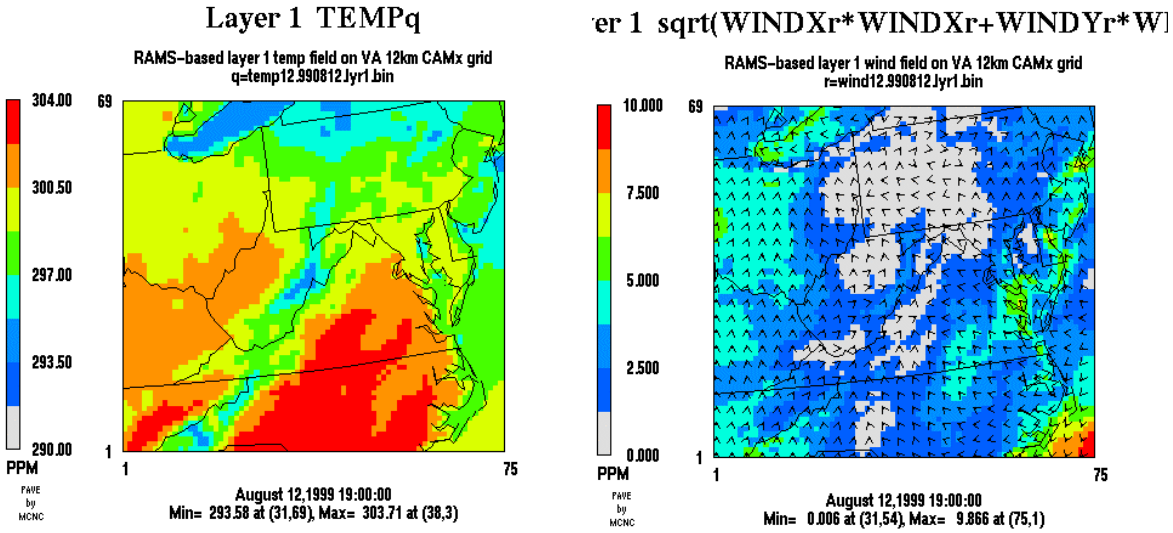
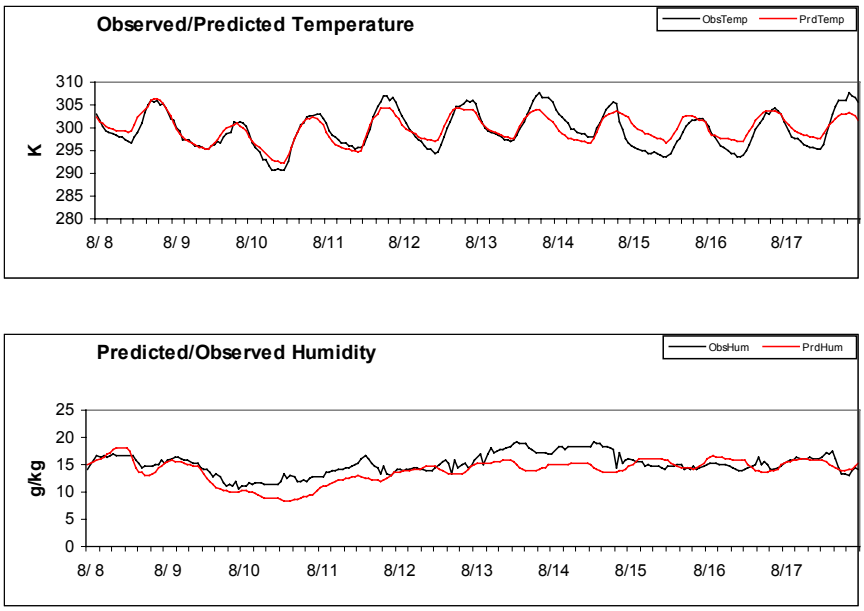


Figure 7: Meteorological Modeling – Observed and Predicted Temperatures and Winds



Emissions data for 1999 from all state in the modeling domain has also been obtained from the NEI. This emissions data has been supplemented with state specific data from Virginia and West Virginia. The conversion of this data to SMOKE input files and the preprocessing of this data through the SMOKE emission model has also been completed. Several problems were encountered during the processing of the emissions data that delayed the commencement of base case modeling efforts. The most difficult problem dealt with the EPA requirement that all EAC modeling efforts used MOBILE6-based emissions for mobile sources. To do this we had to use the latest draft version of the SMOKE emissions preprocessor (Version 1.5). Numerous problems were encountered in attempting to install and run the mobile emissions through this version of the emissions model. Ultimately, the DEQ contracted the developers of SMOKE (Carolina Environmental Program to solve these problems and process the emissions data through this latest version of the emissions preprocessor. With this external assistance, the emissions preprocessing step has also been completed.

Once all the preprocessing steps were completed, the regional photochemical modeling exercise was begun. After several runs using the CMAQ model were completed, it became obvious that the performance of the model was not up to EPA standards using the selected episode. After internal consultations, it was decided to change photochemical models from CMAQ to the Comprehensive Air Quality Model with Extensions (CAMx). The modeling platform was thus changed to use this alternative air quality model. After several runs using CAMx, base case modeling results were produced that meet or exceed EPA's acceptance criteria for model performance. The base case results of the validated CAMx model are presented below in graphic form (Figure 8) showing the simulation of the ozone episode days of August 12th and 13th, 1999. Also presented below are selected comparisons of observed and model predicted ozone concentrations at several area monitors (Figure 9).

Figure 8: CAMx Photochemical Model Results – Base Case Modeling

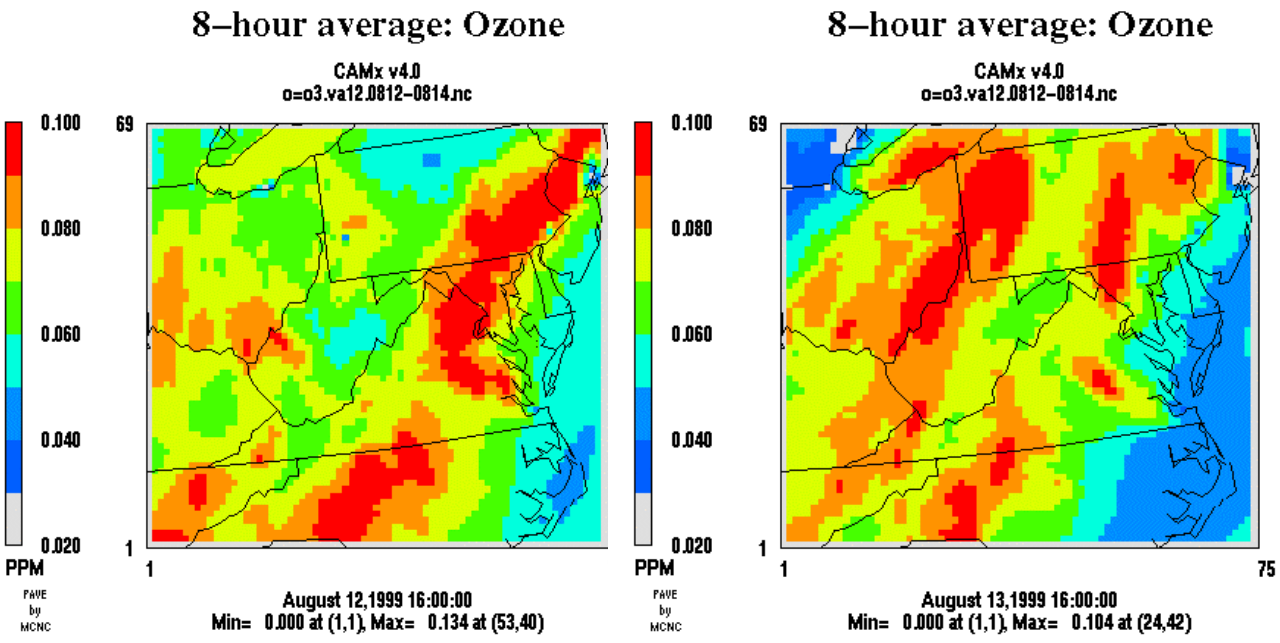
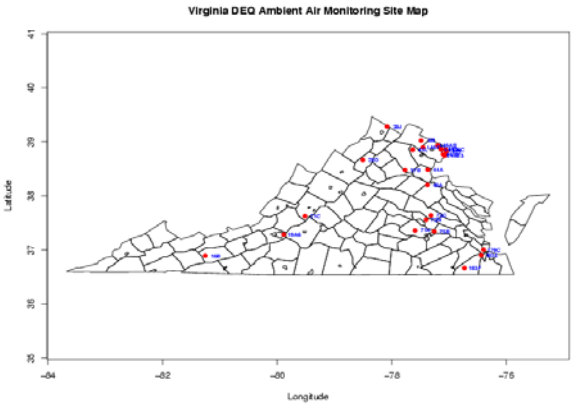
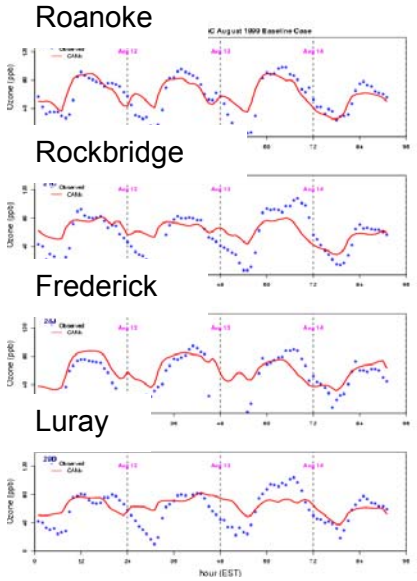


Figure 9: Air Quality Model Validation – Observed & Predicted Ozone Concentrations

Monitoring Stations for Model Validation





In summary, the base case modeling has been completed for the selected ozone episode and the performance evaluation of the model indicates that:

- The EPA performance goals established for air quality models have been met for both episode days.
- The model performance is acceptable for use in future and control case modeling.

F. Future Case Modeling

Once the base case modeling and associated performance evaluation and validation was completed, work began on the future base and control case modeling scenarios. In order to do this, a future year modeling emissions inventory had to be developed to predict future ozone precursor emissions levels in the EAC areas and the overall modeling domain to account for both anticipated growth in unregulated emissions sources and reduction in emissions from sources subject to local, state, and federal control strategies. In developing these future year inventories, the DEQ worked with neighboring EAC states to ensure the consistency of these future estimates. Standard emissions projection and control techniques were used to develop the projected emissions inventories for this purpose.

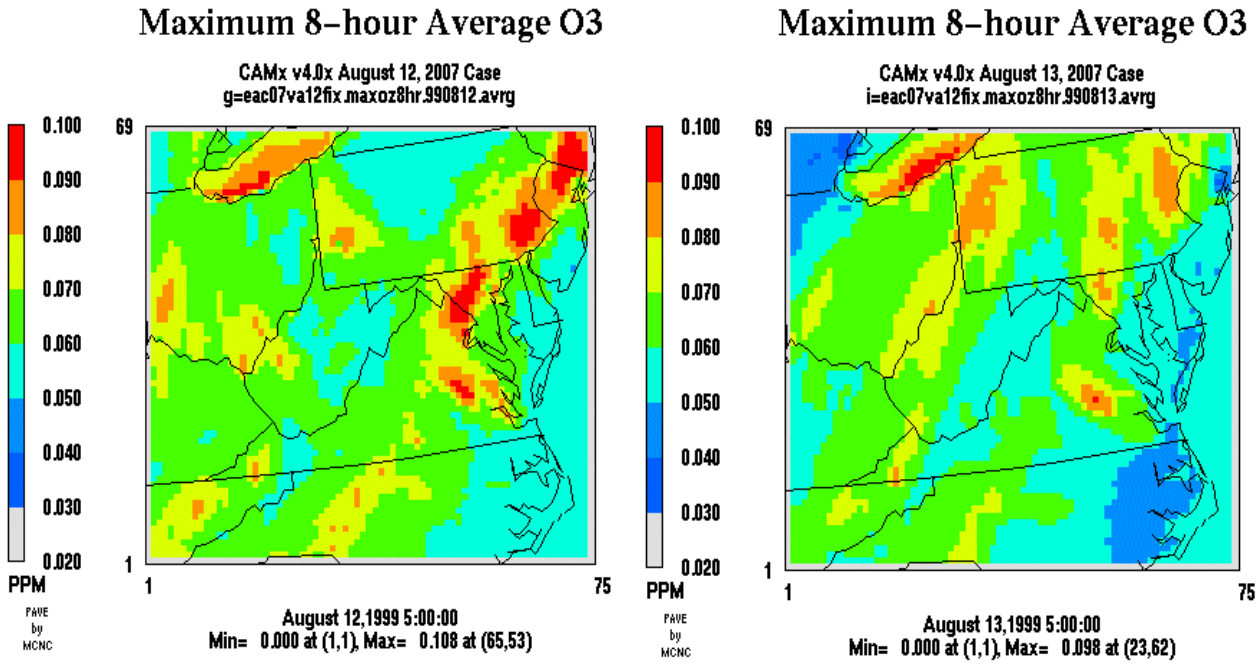
First, the base case inventory was developed based on the assumption of emissions growth coming from unregulated or uncontrolled source categories, along with controlled estimates for source categories subject to State/Regional/National control strategies already promulgated for the control of ozone precursor emissions that were not directly relating to the controls to be implemented through the local EAP. The controls included in this base case inventory include

most of those identified in Section 3 (C) of this document. The subsequent modeling conducted with this inventory produced substantial reductions in predicted ozone concentrations in the

EAC areas and throughout the entire modeling domain. **In fact, the base case controls are predicted to be sufficient to bring both the Virginia EAC areas as well as the panhandle EAC areas in West Virginia and Maryland into compliance with the ozone standard**.

The second future case inventory involved the addition of the local control strategies contained in the EAP to serve as the control case inventory for this project, as identified in Section 3 (A) of this document. The combination of all the controls at all applicable levels (local, state, federal) produced the results shown in Figure 10 below.

Figure 10: CAMx Photochemical Model Results – Control Case Modeling



The results of this modeling shows that most areas within the modeling domain would be at or below the 8-hour ozone standard in 2007 under this **episode scenario as a result of the control strategies to be implemented during this time period. Future ozone levels in the Virginia EAC areas are predicted to be in the 62 to 65 ppb range under these same conditions. Specifically, the Roanoke Valley area is predicted to experience a 22% relative reduction in local ozone concentrations. It is also predicted that the base case design value for the area of 90 parts per billion will be reduced to 70 parts per billion in 2007**. Therefore, the modeling exercise indicates that the desired result of reducing ozone concentrations to levels below the 8-hour ozone standard will be achieved by the implementation of the controls included in this EAP, and combined with the control strategies being implemented on the state and federal levels. A full description of the EAC modeling project is contained in the "Virginia, West Virginia, and Maryland Early Action Compact

Modeling Report and Ozone Attainment Demonstration" which has been submitted with this plan.

5. MAINTENANCE FOR GROWTH

A. Background

Beyond the attainment demonstration provided above, the Early Action Compact also calls for a mechanism and demonstration that the area remains in attainment of the ozone standard after 2007. Although this demonstration of maintenance is not yet completed, the following supporting information is provided to support the assumption that the area will remain in attainment for a substantial time after the predicted attainment date of 2007.

B. Contingency Measures

As part of the local EAP, a mechanism is in place to monitor the progress towards implementing the local controls and assessing their effectiveness. If it is found that progress is not being made or the level of emissions reductions expected is not achieved, the Task Force will reevaluate the existing strategies to enhance their effectiveness, or recommend the adoption of additional control measures. This mechanism represents the contingency measure portion of the local EAP. One or more enhanced or new strategies could be implemented after 2005, in response to continuing exceedances of the ozone standard or a shortfall in anticipated emission reductions from the initial EAP. These additional strategies could also be implemented at any time after 2007 if the situations warranted or called for additional local emission reductions in response to worsening air quality or unexpected increases in local emissions. These measures would require more lead-time for implementation as well as additional work with an expanded group of stakeholders.

C. Other Air Quality Modeling Exercises

Although specific modeling of an additional future maintenance year has not been performed as part of this project, other recent modeling exercises performed by the EPA to support regional or national program provide some indication that many areas of the Country will attain the ozone standard in the near term. These same modeling exercises also indicate that most of these areas will remain in attainment for at least ten years after their projected attainment date. The latest of these EPA modeling projects, used to support the national "Clear Skies" legislation, indicates that most areas in Virginia will attain the ozone standard by 2010 and will remain in attainment at least out to 2020, even without the implementation of the Clear Skies program.

In addition, this modeling shows that predicted ozone concentrations will be trending downward during this period. The specific prediction of this modeling for the Roanoke area is that concentrations in 2010 will be at 67 parts per billion, and then will reduce down to 59 parts per billion in 2020.

CONTROL MEASURES AND REDUCTION ESTIMATES FOR THE ROANOKE OZONE EARLY ACTION PLAN

1. INTRODUCTION

This enclosure contains information concerning the various control measures that have been included in the Roanoke Ozone Early Action Plan. A total of 17 measure are identified, quantified (for emission reductions), and documented. These measures range from federal control programs (motor vehicle standards), state programs (CTG RACT), and local controls. The cumulative impact of these measures in the future attainment year (2007), as compared to the base and interim inventory years (1999 & 2002), is presented in Table 1.

Table 1: Roanoke Valley EAP Emissions Inventory Summary

Source Category	1999 (Baseline)	2002 (Interim)	2007 (Base Case)	2007 (Control Case)
Volatile Organic Compound (VOC) Emissions in tons/day				
Point Sources	4.551	3.518	3.927	3.927
Area Sources	18.845	19.360	20.044	15.300
Non-road Sources	5.683	5.726	5.803	3.804
Mobile Sources	16.770	16.188	11.732	10.489
Totals:	**45.849**	**44.792**	**41.506**	**33.520**
Reductions:	**NA**	**- 1.057**	**-4.343**	**-12.329**
Oxides of Nitrogen (NO_X) Emissions in tons/day				
Point Sources	9.312	7.231	7.876	6.343
Area Sources	5.091	5.254	5.531	5.293
Non-road Sources	7.807	8.049	8.480	6.285
Mobile Sources	30.358	29.166	23.436	18.897
Totals:	**52.568**	**49.700**	**45.323**	**36.818**
Reductions:	**NA**	**-2.868**	**-7.245**	**-15.750**

A summary of the controls included in this analysis is presented in Table 2 below. These measures cover all anticipated emissions reduction that can be expected in the Roanoke Valley area by the attainment year of 2007. Additional refinement of these emissions reduction estimates may be warranted as additional information becomes available through the EAP process. These reduction estimate were developed using the appropriate guidance, methods, and assumptions for developing such estimates and represent our current best estimate of the impact of these control measures on ozone precursor emissions in the Roanoke area.

Control Measures & Estimated Emissions Reductions (From Uncontrolled Levels in 2007)

Emissions Control Measures	VOC (tpd)	NO_X (tpd)
State/Federal Area Source Controls		
Stage I Vapor Recovery	1.756	0.000
Architectural & Industrial Paints	0.372	0.000
Consumer Products	0.178	0.000
Metal Cleaning Solvents	0.163	0.000
Motor Vehicle Refinishing	0.158	0.000
Cutback Asphalt	0.005	0.000
Subtotals:	**2.632**	**0.000**
Federal Non-road Source Controls		
Small Gasoline Engine Standards	1.851	0.112
Diesel Engine Standards	0.000	0.951
Locomotive Engine Standards	0.000	1.112
Large Gasoline Engine Standards	0.015	0.004
Recreational Engine Standards	0.015	0.000
Subtotals:	**1.881**	**2.179**
Federal Mobile Source Controls		
Previous Motor Vehicle Standards (from 1999 levels)	5.038	6.922
Tier 2 Vehicle Standards	0.917	3.799
Heavy Duty Diesel Standards	0.001	0.156
Subtotals:	**5.956**	**10.877**
Local Area Early Action Plan Controls		
Existing Source CTG RACT Controls *	1.098	1.533
Ozone Action Days Program **	0.918	0.611
Open Burning Restrictions (Area)	0.564	0.238
All Other Local Programs (All Sources)	0.001	0.001
Subtotals:	**2.581**	**2.383**
TOTALS:	**13.050**	**17.618**

* **Implemented by State Regulation**
** **To be supported by State Ozone Forecasts**

The remainder of this report is devoted to the individual descriptions of the control measures listed in the control measure summary table.

1. State Stage I Vapor Recovery at Service Stations

This measure involves applying "balanced submerged" underground storage tank refilling and other related controls at gasoline service stations in the Roanoke area. State regulation requires this control in all of the Roanoke area (expect Botetourt County) beginning in 1999

Projected Reductions (VOC)

Emissions Scenario	VOC Emissions (Tons/day)
2007 (without Stage 1)	1.951
2007(with Stage 1)	0.195
Reduction:	**-1.756**

Emission Reduction Calculations

The emission reduction estimate have been developed by applying the established 90% control efficiency for Stage 1 requirements to uncontrolled tank filling, working, and breathing emissions at service stations.

2. Federal Architectural & Industrial Paint Controls

This measure involves the federal rule for Architectural and Industrial Maintenance (AIM) Coatings, which restricts the VOC content of architectural, industrial maintenance, special industrial, and highway markings surface coatings sold and used in the Roanoke area.

Projected Reductions (VOC)

Emissions Scenario	VOC Emissions (Tons/day)
2007 (without AIM rule)	1.912
2007(with AIM rule)	1.529
Reduction:	**-0.382**

Emission Reduction Calculations

The emission reduction estimate has been developed by applying the established 20% VOC emission reduction estimate for the AIM Rule to the appropriate uncontrolled coatings categories.

3. Federal Consumer/Commercial Products Controls

This measure involves the federal rule for certain consumer and commercial products, which restricts the VOC content of these products sold and used in the Roanoke area.

Projected Reductions (VOC)

Emissions Scenario	VOC Emissions (Tons/day)
2007 (without CC rule)	1.785
2007(with CC rule)	1.606
Reduction:	**-0.178**

Emission Reduction Calculations

The emission reduction estimate has been developed by applying the established 10% reduction estimate to uncontrolled consumer/commercial solvent emissions.

4. Federal Metal Cleaning Solvent Controls

This measure involves the federal rule for metal cleaning solvents, which restricts the VOC content of these solvents sold and used in the Roanoke area.

Projected Reductions (VOC)

Emissions Scenario	VOC Emissions (Tons/day)
2007 (without cleaning solvent rule)	1.632
2007(with cleaning solvent rule)	1.469
Reduction:	**-0.163**

Emission Reduction Calculations

The emission reduction estimate has been developed by applying the established 10% reduction estimate for the metal cleaning solvent rule to the appropriate uncontrolled coatings categories.

5. Federal Motor Vehicle Refinishing Paint Rule

This measure involves the federal rule for motor vehicle refinishing paint, which restricts the VOC content of these paints sold and used in the Roanoke area.

Projected Reductions (VOC)

Emissions Scenario	VOC Emissions (Tons/day)
2007 (without refinishing rule)	0.443
2007(with refinishing rule)	0.285
Reduction:	**-0.158**

Emission Reduction Calculations

The emission reduction estimate has been developed by applying the established 36% reduction estimate for the auto refinishing rule to uncontrolled emissions.

6. State Cutback Asphalt Restriction

This measure involves the restriction of the use of "cutback" asphalt in the Roanoke area. This will be required by State regulation beginning in 2005.

Projected Reductions (VOC)

Emissions Scenario	VOC Emissions (Tons/day)
2007 (without asphalt restriction)	0.006
2007(with asphalt restriction)	0.005
Reduction:	**-0.001**

Emission Reduction Calculations

The emission reduction estimate have been developed by applying the established 100% control efficiency and 80% rule effectiveness to uncontrolled emissions.

8 Federal Small Gasoline Engine Standards

This measure involves EPA's establishment of engine emissions standards for small spark ignition gasoline powered nonroad engines. These engine standard have been implemented in two phases by EPA covers both handheld and non-handheld equipment such as lawn & garden and industrial equipment

Projected Reductions (VOC)

Emissions Scenario	VOC Emissions (Tons/day)
2007 (without engine standards)	4.679
2007(with engine standards)	2.828
Reduction:	**-1.851**

Projected Reductions (NO_X)

Emissions Scenario	NO_X Emissions (Tons/day)
2007 (without engine standards)	0.429
2007(with engine standards)	0.318
Reduction:	**-0.112**

Emission Reduction Calculations

The VOC emission reduction estimate have been developed by applying the EPA established 30% emission reduction from equipment covered by Phase 1 standards only, and 40% emission reduction for equipment covered by Phase 1&2 in 2005. The minor NO_X reduction were calculated in a similar manner.

8. Federal Nonroad Diesel Engine Standards

This measure involves emission reductions from EPA emissions standards for non-road compression-ignition (diesel-powered) utility engines. This measure affects diesel-powered construction equipment, industrial equipment, and others rated at or above 37 kilowatts (~50 horsepower).

Projected Reductions (NO_X)

Emissions Scenario	NO_X Emissions (Tons/day)
2007 (without engine standards)	3.496
2007(with engine standards)	2.545
Reduction:	**-0.951**

Emission Reduction Calculations

The NO_X emission reduction estimate have been developed by applying the EPA established 27% emission reduction from equipment covered by these standards in 2007.

9. Federal Locomotive Engine Standards

This measure involves NO_X emission standards for locomotive engines manufactured or remanufactured after 2001. This program includes all locomotives originally manufactured from 2002 to 2004, and the remanufacture of all engines built since 1973

Projected Reductions (NO_X)

Emissions Scenario	NO_X Emissions (Tons/day)
2007 (without engine standards)	2.647
2007(with engine standards)	1.536
Reduction:	**-1.112**

Emission Reduction Calculations

The NO_X emission reduction estimate have been developed by applying the EPA established 42% emission reduction from equipment covered by these standards in 2007.

10. Federal Large Gasoline Engine Standards

This measure involves VOC emission standards for large industrial spark-ignition engines, recreational Vehicles, and diesel marine engines.

Projected Reductions (VOC)

Emissions Scenario	VOC Emissions (Tons/day)
2007 (without engine standards)	0.061
2007(with engine standards)	0.047
Reduction:	**-0.015**

Projected Reductions (NO_X)

Emissions Scenario	NO_X Emissions (Tons/day)
2007 (without engine standards)	0.020
2007(with engine standards)	0.016
Reduction:	**-0.004**

Emission Reduction Calculations

The VOC emission reduction estimate have been developed by applying the EPA established 24% emission reduction from equipment covered by these standards in 2005. The NO_X reduction estimate is based on a 21% reduction in 2005.

11. Federal Spark Ignition Marine Engine Standards

This measure involves VOC emission standards for spark-ignition marine engines including outboard engines, personal watercraft engines, and jet boat engines.

Projected Reductions (VOC)

Emissions Scenario	VOC Emissions (Tons/day)
2007 (without engine standards)	0.059
2007(with engine standards)	0.044
Reduction:	**-0.015**

Emission Reduction Calculations

The VOC emission reduction estimate have been developed by applying the EPA established 25% emission reduction from equipment covered by these standards in 2005.

12. Federal Onroad Motor Vehicle Emissions Standards

The following national motor vehicle emission reduction measures have or will be implemented that will reduce mobile source emissions in the early action area. These measures are:

- Federal Tier 1 Vehicle Standards
- National Low Emissions Vehicle Standards
- Federal Tier 2 Vehicle & Low Sulfur Fuel Standards
- Heavy Duty Diesel Engine Standards

These measures impact most motor vehicle classes and establish engine and other emissions standard for Vehicles based on model years. The reductions from these measures normally accumulate over time as new vehicles subject to these standards replace older, dirtier vehicles.

Projected Reductions (VOC)

Tier 1 Vehicle Standards and National Low Emissions Vehicle Programs

Emissions Scenario	VOC Emissions (Tons/day)
1999 Base Year	16.770
2007 Attainment Year (with Tier 1 & NLEV)	11.732
Tier 1/NLEV Reduction:	**-5.038**

Tier 2 Vehicle Standards

Emissions Scenario	VOC Emissions (Tons/day)
2007 (Tier 1 & NLEV)	11.732
2007 (with Tier 2)	10.815
Tier 2 Reduction Benefit	**-0.917**

Heavy Duty Diesel Engine Standards

Emissions Scenario	VOC Emissions (Tons/day)
2007 (Tier 1&2, NLEV)	10.815
2007 (with HDDV)	10.814
Tier 1/NLEV Reduction Benefit	**-0.001**

Projected Reductions (NO_X)

Tier 1 Vehicle Standards and National Low Emissions Vehicle Programs

Emissions Scenario	NO_X Emissions (Tons/day)
1999 Base Year	30.358
2007 Attainment Year (with Tier 1 & NLEV)	23.436
Reduction:	**-6.922**

Tier 2 Vehicle Standards

Emissions Scenario	NO_X Emissions (Tons/day)
2007 (Tier 1 & NLEV)	23.436
2007 (with Tier 2)	19.637
Reduction:	**-3.799**

Heavy Duty Diesel Engine Standards

Emissions Scenario	NO_X Emissions (Tons/day)
2007 (Tier 1&2, NLEV)	19.637
2007 (with HDDV)	19.481
Reduction:	**-0.156**

Emission Reduction Calculations

All emission reduction calculations for motor vehicles have been developed using the EPA MOBILE6 emissions model. Detailed information on the calculation of these reductions can be provided upon request.

13. State Existing Source CTG RACT Controls

This measure involves the implementation of Control Technology Guideline (CTG) "Reasonably Available Control Technology" to selected point and area sources in the Roanoke area. This will be required by State regulation beginning in 2005.

Projected Point Source Reductions (NO_X)

Emissions Scenario	NO_X Emissions (Tons/day)
2007 (without RACT)	7.876
2007 (with RACT)	6.343
Reduction:	**-1.533**

Projected Point & Area Source Reductions (VOC)

Emissions Scenario	NO_X Emissions (Tons/day)
2007 (without RACT)	2.029
2007 (with RACT)	0.931
Reduction:	**-1.098**

Emission Reduction Calculations

The point source NO_X emission reduction are based on a 25% reduction of emissions from selected major sources. The area source VOC emission reductions are based on 50% to 70% reduction of emissions from solvent cleaning and graphic arts operations.

14. Ozone Action Days Program

This measure involves a combination of voluntary and mandatory episodic restrictions on ozone precursor emissions producing activities during predicted high ozone day. These activities include vehicle travel, landscaping, vehicle refueling, solvent usage, pesticide application, and others. This program will be support by the State ozone forecasting program.

Projected Mobile, Area, & Nonroad Source Reductions (VOC)

Emissions Scenario	NO_X Emissions (Tons/day)
2007 (without program)	30.657
2007 (with program)	29.739
Reduction:	**-0.918**

Projected Mobile & Nonroad Source Reductions (NO_X)

Emissions Scenario	NO_X Emissions (Tons/day)
2007 (without program)	25.79
2007 (with program)	25.182
Reduction:	**-0.611**

Emission Reduction Calculations

Emissions reductions were based on a projected activity and emissions reduction of 3% to 5% from the emissions sources impacted. The higher reduction of 5% was used for activities that had a state/local mandatory restriction component.

15. Local Open Burning Restrictions

This measure involves a combination of voluntary and mandatory restriction of open burning activities relating to land clearing and activities. Several jurisdictions have adopted local ordinance to this effect. Others have committed to an episodic restriction on these activities on predicted high ozone days.

Projected Reductions (VOC)

Emissions Scenario	NO_X Emissions (Tons/day)
2007 (without program)	0.705
2007 (with program)	0.141
Reduction:	**-0.564**

Projected Reductions (NO_X)

Emissions Scenario	NO_X Emissions (Tons/day)
2007 (without program)	0.297
2007 (with program)	0.059
Reduction:	**-0.238**

Emission Reduction Calculations

Emissions reductions were based on a projected activity and emissions reduction of 80% from the emissions sources impacted.

Roanoke Valley Area

Ozone Early Action Plan (EAP)
Local Strategies

Section I of III
Heavy Duty Diesel and Diesel Equipment Strategies

Table of Contents:

Ozone Early Action Plan Control Measure Profile
Heavy Diesel Equipment and Vehicles

Title of Measure	**Reducing Locomotive Idling**
Pollutants reduced	PM, NOX
Costs	N/A
Sources affected	Locomotives
Geographical area	City of Roanoke
Implementation date	Completed by Norfolk Southern Railroad Company
Requires approval by State Air Pollution Control Board?	No
Enforceable?	No
Quantifiable?	Yes
Description of measure	To increase operating efficiency and reduce emissions from Transportation activities Norfolk Southern Railway Company has implemented a operating policy to reduce emissions from idling locomotives as allowable by ambient conditions being greater then 32 degrees.

Ozone Early Action Plan Control Measure Profile
Heavy Diesel Equipment and Vehicles

Title of Measure	**Limit Idling Times for School Buses**
Pollutants reduced	PM, Nox (~0.74 tpy)
Costs	Zero costs other than normal operational costs.
Sources affected	Mobile Sources – Buses
Geographical area	County of Roanoke, County of Botetourt, and Town of Vinton (note: City of Roanoke, and the City of Salem already have school bus idling restrictions per 9VAC5-20-201)
Implementation date	ASAP
Requires approval by State Air Pollution Control Board?	Yes - 9VAC5-20-201 needs to be administratively updated with the 2000 census data. Bob Mann with the VDEQ is checking to see if this update can be handled administratively.
Enforceable?	Yes. Idling restriction already exist for the City of Roanoke and part of Roanoke County and the City of Salem.
Quantifiable?	Yes, will need to determine the number of buses, model, year, and an estimated idling time for buses in this area. Assumptions: 300 HDD 1995 buses, idle 30 minute/day, 25g/hour NOX, 180 day/yr = 300*25/2 *180 *1000g/kg=675 kg/year or 0.74 ton/year.
Description of measure	This emission reduction strategy involves increasing public awareness and enforcing the existing idling restrictions and expanding the idling restrictions as necessary based on the 2000 census data. A school bus burns ½ gallon of fuel for each hour it idles. If a school system with 50 buses reduce idling times by 30 minutes a day, the savings at $1 a gallon will be $2,250 a year in fuel costs.

Ozone Early Action Plan Control Measure Profile
Heavy Diesel Equipment and Vehicles

Title of Measure	**Retrofit Roanoke County School Buses**
Specific Project	Retrofit 100 Roanoke County school buses
Pollutants reduced	PM (0.07tpy), CO (1.24tpy), HC (0.26tpy)
Costs	The costs of Roanoke County school bus retrofit project will be paid for by a court settlement. Oxidation catalysts cost about $1,500 to $2,500 each, and diesel particulate filters cost about $5,000 to $8,000 each. Costs should decrease with large-volume orders as more fleets participate. Ultra-low sulfur fuel will initially be priced at 8 cents per gallon more than conventional fuel at the refinery.
Sources affected	Heavy-Duty Diesel School Buses
Geographical area	County of Roanoke
Implementation date	July 2004
Requires approval by State Air Pollution Control Board?	No
Enforceable?	N/A –Retrofit are currently underway
Quantifiable?	Yes – The VDEQ projected the emissions benefit of Roanoke County diesel bus retrofit project to be 0.26 tpy HC, 1.42 tpy CO, and 0.07 tpy PM
Description of measure	Roanoke County will be retrofitting 100 school buses with: • Diesel oxidation catalysts—pollutants and particulate matter are chemically oxidized to water vapor and carbon dioxide.

Ozone Early Action Plan Control Measure Profile
Heavy Diesel Equipment and Vehicles

Title of Measure	**City of Roanoke - Purchase more efficient, Bio-diesel compatible alternative fuel solid waste trucks**
Pollutants reduced	PM (~7.8 kg/yr), NOX (~250 kg/year)
Costs	In the long run, the city expects to save money.
Sources affected	Mobile Sources – Solid Waste Trucks
Geographical area	City of Roanoke
Implementation date	2003 – 2007
Requires approval by State Air Pollution Control Board?	NO
Enforceable?	Yes (Local Government Commitment)
Quantifiable?	Yes 5 trucks*1.5hr less operating time/truck*4 day/week *52 weeks/year * 20mph = 31,200 miles/year reduction. NOX= 31,200 miles/yr * 8 g/mi *1000g/kg = 250 kg/year or 0.27 tons/yr PM = 31,200 miles/year * 0.25 g/mi = 7.8 kg/year
Description of measure	In 2003, Roanoke city purchased five new garbage trucks, which can be converted to bio-diesel (Heil automated trucks with Python method). These trucks are more efficient and will have a 20 percent savings in the amount of time it takes to complete the route. Instead of the average of 8 seconds for can pick up, these new trucks will average 6 seconds. Roanoke city picks up trash four days a week. As these new trucks are integrated into the routes, the routes will be adjusted to reduce the driving time. These new trucks will save from 1 to 1 ½ hour each day. Roanoke has a total of 13 garbage trucks. Usually, only 10 trucks are on the road because of maintenance. As the fleet is replaced, the city will purchase the same type vehicle. This will reduce maintenance time because they will be newer vehicles and they will be the same style allowing for quicker maintenance.

Ozone Early Action Plan Control Measure Profile
Heavy Diesel Equipment and Vehicles

Title of Measure	**Purchase/Use of ethanol compatible alternative fuel vehicles**
Pollutants reduced	NOX, VOC
Costs	In the beginning, slightly higher than normal vehicle replacement. Once alternative fuel supply is improved, price may decrease.
Sources affected	Mobile Sources – City of Roanoke vehicles
Geographical area	City of Roanoke
Implementation date	2003 – 2007
Requires approval by State Air Pollution Control Board?	NO
Enforceable?	Yes (Local Government Commitment)
Quantifiable?	Yes
Description of measure	In 2003, City of Roanoke purchased eleven sedans and station wagons that are ethanol fuel compatible. By 2007, the city will purchase an additional fifteen ethanol fuel compatible vehicles. While the use of ethanol fuel is being pursued, the city is evaluating the option of outsourcing all fleet fueling operations. If outsourcing is initiated, the city would be dependent upon the selected vendor(s) to provide ethanol fuel. Therefore, at this time the city cannot establish an accurate timetable for integrating the use of alternative fuels.

Ozone Early Action Plan Control Measure Profile
Heavy Diesel Equipment and Vehicles

Title of Measure	**City of Roanoke – Purchase new cleaner fleet trucks that will operate using bio-diesel as an alternative fuel to diesel**
Pollutants reduced	PM, VOCs
Costs	In the beginning, slightly higher than normal vehicle replacement. Once alternative fuel supply is improved, price may decrease. Biodiesel (B20) cost ~$0.15 more per gallon than diesel.
Sources affected	Mobile Sources – City of Roanoke vehicles
Geographical area	City of Roanoke
Implementation date	2003 – 2007
Requires approval by State Air Pollution Control Board?	NO
Enforceable?	Yes (Local Government Commitment)
Quantifiable?	Yes
Description of measure	In 2003, City of Roanoke purchased nine new trucks that will operate using bio-diesel fuel. By 2007, City of Roanoke will purchase an additional twelve bio-diesel fuel compatible vehicles. While the use of bio-diesel is being pursued, the city is evaluating the option of outsourcing all fleet fueling operations. If outsourcing is initiated, the city would be dependent upon the selected vendor(s) to provide bio-diesel. Therefore, at this time the city cannot establish an accurate timetable for integrating the use of alternative fuels.

Ozone Early Action Plan Control Measure Profile
Heavy Diesel Equipment and Vehicles

Title of Measure	**Purchase/Use of hybrid vehicles**
Pollutants reduced	PM, VOCs, NOx
Costs	In the beginning, higher than normal vehicle replacement. Price will decrease as hybrid vehicle price declines.
Sources affected	Mobile Sources – City of Roanoke vehicles
Geographical area	City of Roanoke
Implementation date	2003 – 2007
Requires approval by State Air Pollution Control Board?	NO
Enforceable?	Yes (Local Government Commitment)
Quantifiable?	Yes
Description of measure	In 2003-2004 fiscal year, City of Roanoke will purchase one 2004 Toyota Prius hybrid vehicle. Dependant upon favorable evaluation and field-testing, the city will purchase additional Toyota Prius or similar vehicles.

Ozone Early Action Plan Control Measure Profile
Heavy Diesel Equipment and Vehicles

Title of Measure	**Purchase of more efficient, low-emission and alternative fuel vehicles**
Pollutants reduced	PM, VOCs, NOx
Costs	
Sources affected	Mobile Sources – County Fleet
Geographical area	Roanoke County
Implementation date	2004
Requires approval by State Air Pollution Control Board?	NO
Enforceable?	Yes (Local Government Commitment)
Quantifiable?	Yes (Only after vehicles are purchased)
Description of measure	** By late 2003 or early 2004, Roanoke County anticipates the approval of a plan that will consider purchasing alternative fuel and low-emission vehicles when making vehicle purchases.

Ozone Early Action Plan Control Measure Profile
Education and Awareness

Title of Measure	**Education and Information Training**
Pollutants reduced	PM, VOCs, NOx
Costs	
Sources affected	Mobile Sources – Roanoke County
Geographical area	Roanoke County
Implementation date	2003 - 2004
Requires approval by State Air Pollution Control Board?	NO
Enforceable?	Yes (Letter/Brochure Attachment to EAP)
Quantifiable?	Yes (Measure any fuel reduction that occurred after training)
Description of measure	On August 8, 2003, Roanoke County distributed a brochure to all its employees urging them to reduce the environmental impact of driving both County and personal vehicles. Items focused on car-pooling, planning trips, and reduction of idling and warm up periods. In addition, all drivers of County vehicles will receive "effective environmental driving" classroom training by June 30, 2004.

Roanoke Valley Area

Ozone Early Action Plan (EAP)
Local Strategies

Section II of III
Air-Quality Action Day, Public Education and Stationary Sources Strategies

Table of Contents:

Ozone Early Action Plan Control Measure Profile

Title of Measure	**Voluntary EAC Pledges and Air Quality Action Day Commitments from Local Businesses (Days forecast to have an 8-hour average concentration of Ozone of 85 ppb or higher – definition could expand to include PM 2.5 in the future)**
Pollutants reduced	PM, VOCs, NOx
Costs	Implementing this strategy will consume a considerable amount of time. Associated costs will include the amount of funding needed to partially support a position with the Regional Commission. The RVARC will be filling the Ride Solutions Coordinator vacancy in the near future. The requirements of this position have been expanded to include Ozone Action Day Coordinator duties as they relate to transportation issues. Other minor personal costs would be those associated with providing internships for students from local schools and universities at the RVARC. It is anticipated that interns will assist the Ride Solutions Coordinator. Additionally, the cost of distributing educational materials such as posters and brochures (videos) should be included in the analysis. To help alleviate this expense, EAC members could request that businesses agree to partially (or fully) pay for the educational materials they distribute as part of their EAC pledge. (Although this may decrease our chances of meeting our established goal.) EPA has already produced some very nice brochures and educational materials we could utilize (rather than reinventing the wheel).
Sources affected	**Roanoke's largest employers** (With in the EAC area there are approximately 243 businesses that have 100 or more employees, the largest ones will be targeted first.)
Geographical area	Roanoke CMSA
Implementation date	2003 – 2007
Implementation date	2003 – 2007

Requires approval by State Air Pollution Control Board?	NO This is a voluntary pledge on the part of local business; therefore it would not require SAPCB approval.
Enforceable?	NO
Quantifiable?	NO Actual emissions reductions from this measure cannot be quantified and incorporated in the modeling. Although the emissions reductions will not be quantifiable, the strategy will have a *quantifiable goal* of exposing at least 10,000 people to the educational material through their place of employment. The committee feels this goal can be easily achieved if the Roanoke area's largest employers agree to sign the pledge.
Description of measure	This measure falls in the realm of public education, and is aimed at altering or modifying the behavior of local citizens to remedy the air quality problem. In this measure, the targeted business would make a voluntary pledge to participate in Roanoke's ozone action program. As a basic requirement of this pledge, the employer provides educational materials on ozone to it's employees. The educational package will include ozone action day posters to be displayed in the workplace, as well as brochures explaining the effects of ozone and what individuals can do to lower ozone concentrations. The pledge would also require each business to dedicate an employee(s) who is responsible for checking and posting the daily ozone forecast (http://www.deq.state.va.us/ozone/) during the ozone season. Individual businesses will be encouraged to take initiative and further develop their own air quality programs beyond the basic pledge. Further development could include measures such as holding AQ workshops for their employees, providing environmental awards or merits to employees who take initiative in the program, and depending on the type of business, consumer based incentives which would alter the behavior of the consumer. Businesses could also opt to participate in VA DEQ's Environmental Excellence Program. Presenting this program to the local businesses will be the most time consuming and challenging aspect of this strategy's implementation. The most time effective manor, in which this strategy could be presented, would be to invite representatives from targeted businesses to a meeting providing information on the strategy. The meeting would also provide background

	information on the EAC, its purpose and why it would be advantageous for local businesses to get involved. The RVARC and various EAC members who represent the local business community would be instrumental in providing contacts and setting up the meeting. Part of this measure may involve partnerships with EPA and VA DEQ.
Additional Information	An EPA EMPACT program document titled "Ozone Monitoring, Mapping, and Public Outreach – Delivering Real-Time Ozone Information to Your Community" (EPA, 1999) provides detailed information about implementing these types of public education programs in your community. It also has several great examples of similar types of programs that were successfully implemented in other cities and states. Though these programs did not provide "quantifiable" emissions reductions, they did have measurable success in creating greater public awareness. It is important to note that that if the State of Virginia, or a specific locality chose to launch an air quality awareness campaign, in order for it to truly be successful they would need a staff (or staff person) whose major duties are dedicated to the program on a year round basis. In fact, the North Carolina Department of Air Quality, which has a successful Air Awareness program, recommends "even if budgets are tight, air quality agencies should dedicate a full-time staffer to manage their ozone outreach programs all year long." (Ozone Monitoring, Mapping and Public Outreach, EPA 1999) If the Roanoke EAC members choose to implement the various public awareness and outreach strategies, it would be in the city's best interest (since we will be committed to following through on these activities) to provide a staff person who can lead and coordinate these activities with the help of volunteers from the EAC. Finally, since many of the public education measures are inter-related, and it would be beneficial for the committee members of the various public education strategies to work together.

Ozone Early Action Plan Control Measure Profile

Title of Measure	**Voluntary Program with Gas Stations to promote fueling early in the morning or later at night. Mandatory agreement from local governments to refuel vehicle fleets either early in the morning or later at night.**
Pollutants reduced	VOC
Costs	The cost of any incentive
Sources affected	Gasoline Stations, General public, Local Governements
Geographical area	Region wide
Implementation date	Ozone Season 2004
Requires approval by State Air Pollution Control Board?	No
Enforceable?	No
Quantifiable?	Yes Easily determined by looking at previous and present hourly filling rates.

Description of measure	The following area businesses have been contacted and have given initial willingness to cooperate by offering some incentive for filling cars prior to 8:00 am and after 5:00 pm. Letters from these companies will be forwarded to the MPO shortly informing them of each individual effort. Kroger Sheetz Workman Oil PM Transport Other businesses that are currently considering participation in this effort are: Jasraj Inc. Patel Brothers Go Mart 7-11 ETNA These sources likely control 60% of impacted area stations. Incentives could be Free coffee to fill in AM prior to 8 AM Free small drink to fill after 5PM Free gas with 10 fill-ups at a station before 8AM or after 5PM Free sub during next visit with purchase of drink and chips with 5 fill-ups prior to 8AM or after 5PM. Free groceries with 10 fill-ups prior to 8AM or after 5PM. Price reduction on gas when filling during those hours. Press release to general public advising public of the need for compliance with this voluntary program. Then follow up with additional informational press release advising public of how the program is doing. This should get other businesses to join in and work toward reducing emissions. Local Governments will be asked to refuel local fleets before 8:00 am or after 5:00 pm on days predicted to be nonattainment for Ozone.

Title of Measure	**Encouragement of Consumer Purchase of Fuel Efficient Vehicles**
Pollutants reduced	VOC, NOX
Costs	This strategy will be incorporated into marketing costs for public relations/ education strategies and/or in kind contributions from private entities.
Sources affected	Vehicle Dealerships
Geographical area	Region wide
Implementation date	Ozone Season 2004
Requires approval by State Air Pollution Control Board?	No
Enforceable?	No (Voluntary)
Quantifiable?	No
Description of measure	As a part of the general public education/ relations efforts (see page 18) individual consumers, private fleets and local governments will be encouraged to purchase fuel efficient and/or hybrid vehicles whenever possible.

Ozone Early Action Plan Control Measure Profile
Education and Awareness

Title of Measure	**Media and Public Relations Regarding Air Quality Action Days**
Pollutants reduced	PM, VOCs, NOx
Costs	½ Full-time staff hours (RIDE Solutions) – minimum supplies
Sources affected	General
Geographical area	Region Wide
Implementation date	2005
Requires approval by State Air Pollution Control Board?	No
Enforceable?	No
Quantifiable?	No

Description of measure	Summary of suggestions - Revised 11/10/03 Notes: 1. This list is intended to avoid duplicating Strategy #1. 2. This list does not include paid advertising. I. PREPARATION A. Develop a distinctive, memorable name for ozone action days. B. Conduct a contest to develop a name, logo and letterhead. C. Develop a simple, consistent message. D. Develop a standard power-point presentation. E. Develop or obtain brochures and other handout material. F. Draft prototype articles for inclusion in newsletters, house organs, etc. G. Prepare public service announcements for radio and TV. H. Develop a list and schedule of organizations to contact. I. Develop a web site, possibly piggybacked on RideSolutions. J. Sign up service organizations to sponsor an educational project. II. GENERAL INFORMATIONAL CAMPAIGN A. Newspaper articles (at least once each year). B. Letters to the editor and op-ed articles. C. PSA spots on commercial radio and TV stations. D. Programs and PSA spots on government access cable TV. E. Donated billboards. F. Presentations to service organizations and other groups. G. Submit sample articles for use in newsletters and house organs. H. Annual awards program for participating organizations. I. Periodic news releases listing participating organizations. III. AIR QUALITY ACTION DAYS A. Notice and suggestions in daily newspaper that morning. B. Suggestions for actions in TV and radio weather forecasts. C. Update the web site with alert information and suggested actions. IV. MEASURABLE GOALS A. Annual number of published newspaper articles. B. Annual number of published letters and op-ed articles. C. Annual number of TV and radio programs. D. Annual number of newsletters and house organs. E. Annual number of billboards. F. Annual number of presentations and/or audience members.

Ozone Early Action Plan Control Measure Profile

Title of Measure	**Transit pass for college students and employees**
Pollutants reduced	PM, VOCs, NOx
Costs	
Sources affected	Mobile Sources – Valley Metro Transit
Geographical area	Roanoke Valley
Implementation date	2005 - 2007
Requires approval by State Air Pollution Control Board?	No
Enforceable?	No
Quantifiable?	No
Description of measure	Work with area colleges and employers to annually purchase at least 300 Valley Metro transit passes. These passes would be used with their voluntary Ozone Action Day plans and/or throughout the year. This is a voluntary measure but has a committed goal of 300 passes per year.

Ozone Early Action Plan Control Measure Profile

Title of Measure	**Bicycle Infrastructure and Amenities**
Pollutants reduced	PM, VOCs, NOx
Costs	Infrastructure – Local Government
Sources affected	Mobile
Geographical area	Region Wide
Implementation date	2005 - continuing
Requires approval by State Air Pollution Control Board?	No
Enforceable?	No
Quantifiable?	Yes (Need inventory of Infrastructure and Amenities)
Description of measure	○ Encourage local governments to increase pedestrian/bicycle infrastructure spending. ○ make presentations to City Councils and County Board of Supervisors ○ Establish a safe network of bike routes with effective signs and lane markings. ○ continue work with RVARC on Regional Bicycle Suitability Study and with VDOT ○ Educate public about bringing bikes onto public transit (i.e., Valley Metro). ○ work with Valley Metro to advertise this feature ○ Encourage installation of bike racks at public and private-owned buildings. ○ racks at City/County buildings, libraries, civic centers, schools – funding for these goes back to first item on this list, encouraging local governments to increase spending for bicycle infrastructure and amenities ○ encourage developers to provide bike infrastructure and amenities, see City and County Comprehensive Plans on this topic Note: Roanoke County Zoning Administrator stated that we could not require a private entity to provide bicycle infrastructure and amenities, only recommend and encourage them. He said it could be worked into one of the proffers of a rezoning application, but would be case-specific.

Ozone Early Action Plan Control Measure Profile

Title of Measure	**School Based Public Education K-12 and Adult Education**
Pollutants reduced	PM, VOCs, NOx
Costs	Volunteers
Sources affected	General
Geographical area	Region Wide
Implementation date	2005 - continuing
Requires approval by State Air Pollution Control Board?	No
Enforceable?	No
Quantifiable?	No
Description of measure	The Roanoke Valley Clean Valley Council (CVC), which is funded jointly by the state and the Roanoke Valley Resource Authority, plus private donations, serves the four Valley governments plus Botetourt County. One of its major functions is an education program under which a staff member visits the area schools on an invitation basis and makes presentations to students regarding litter control and recycling. The primary focus is the elementary school level, but some presentations are made to middle and high school students, particularly when environmental issues are part of the curriculum. The intent is to educate students regarding these issues, and through them to influence their parents. The strategy is to have the CVC educator include a component regarding clean air and actions that can be taken to reduce air pollution including ozone. There may be a need for additional funds for materials and additional staff time. These funds could come from the local governments or voluntarily from the business community. The program would be designed to augment an exisiting program conducted in schools by the Virginia Department of Environmental Quality (DEQ), and not to compete with it.

Ozone Early Action Plan Control Measure Profile

Title of Measure	**Tree Canopy/ Urban Forestry**
Pollutants reduced	PM, VOCs, NOx
Costs	• Cost of actual trees, plus labor for planting and maintenance • We must consider what size/age/species of tree would be most effective to purchase. • Costs would presumably be covered by localities. (Roanoke City, Roanoke County, Vinton, Salem, and Botetourt) • An possibility that would raise awareness, community involvement, and provide funding, would be to invite private sector to participate. Members of the Roanoke College community have expressed interest in adopting Salem planting, integrating the planting and upkeep into the student community service program. The college might also be able to fund the Salem effort. • Other members of private sector might be able to sponsor either a planting, or a particular area. Perhaps a donation of $X.00 would entitle the donating business or group to a plaque at the site. We could also offer option that people could simple donate money, but no time, using city staff to actually do the planting, but having the trees and supplies covered by donation. • We should also look into grants specific to tree programs, such as Trees Virginia. • For "memorial trees," each locality would specify the donation amount required, which might involve considerations of location, size and species of tree, etc.
Sources affected	General
Geographical area	Region Wide
Implementation date	2005 - continuing
Requires approval by State Air Pollution Control Board?	No
Enforceable?	No
Quantifiable?	Yes -

Description of measure

- In calculating actual pollution reduced, it is probably not realistic to expect that we will have concrete numbers, although we do know some estimates on the capabilities of tree filtration. The following numbers came from the Roanoke City Vision Urban Forestry Plan, 2001-2002.

Annual Air Pollution Uptake
$16 per tree
Energy Savings Related to heating/cooling buildings
$10 per tree
Stormwater Runoff Reduction $
7 per tree

Trees serve to remove the following pollutants:

- ozone: more than 1 lb annually
- carbon dioxide : 26 lbs annually
- nitrogen dioxide : more than 2 lbs annually (including sulfur dioxide)
- sulfur dioxide : see above
- carbon monoxide : information on amount filtered unavailable
- particulate matter less than 10 microns in size : information on amount filtered unavailable

Based on these numbers, we could plant X number of trees, multiply that by the pollution savings, and project an idea of how much difference the trees might make. We would also have to consider the size and age of the trees. Because we do not yet have any final numbers, we can only estimate based on available information, and the probability that since trees planted before 2007 will be relatively young, and therefore less efficient than mature ones at filtering air pollution. One large tree can filter up to 60 pounds of pollutants per year. (Source: www.wastediversion.org) For purposes of calculation, **we will assume that trees planted by 2007 will filter one-third as many pollutants as a mature tree** (20 lbs total per tree rather than 60 lbs)

Reasonable suggestion for **total number of trees to be planted** (to be approved by Early Action Compact Committee):
Approximately **10,000** trees

Description of measure - Continued

If 10,000 trees were planted before 2007, the region would begin to benefit from efforts that eventually could reduce **300 tons** annually of pollutants from air in the region. Based on our estimate that the trees existing in 2007 would filter only one third of the pollutants that a mature tree would, this number would likely be closer to **100 tons**.

This number was arrived at by assuming that Roanoke City will follow through with committed plans to plant 188,000 trees over the next decade, and taking into consideration that we do not want to set unreachable goals in the Early Action Compact. All localities would need to participate to effectively reach this goal, and this estimate is made with the assumption that they would. This total would still fall short of the ideal 40% coverage, but would be a great improvement on the region's present status, and has the potential to significantly improve air quality.

The City of Roanoke adopted an **Urban Forestry Plan** as an **Element** of its comprehensive plan, **Vision 2001-2020**, on April 21, 2003. **Dan Henry**, the city's urban forester, is actively working to implement the **Urban Forestry Plan's** recommendations for increasing tree canopy through tree planting, community involvement, public/private partnerships, ordinance revisions, and increased protection of the existing tree canopy. City Council approved additional tree planting funds for fiscal year 2003-2004. Funding for future years has not been determined as of December 2003."

Anita McMillan with the Town of Vinton will address the local tree committee in an effort to get a commitment to plant a set number of trees by 2007. **James Vodnik** with Roanoke County reports that Roanoke County is committed to planting 100 trees a year. **Beth Carson**, the horitculturist for the City of Salem has committed the city to planting its already-mandated 100 new trees each year, and said that in addition, the city has allocated $100,000 to "green-up" West Main Street in Salem.

The City of Roanoke has initiated a Commemorative Trees Program whereby individuals or groups can donate $250 and have a tree planted on public land in honor of friends, family, or special occasions. The first Commemorative Tree was planted on October 23, 2003 in Highland Park.

Ozone Early Action Plan Control Measure Profile

Title of Measure	**New Bus Service between Roanoke, Salem, Blacksburg and Christiansburg (See Appendix for service schedule and other details.)**
Specific Project	New Bus Service
Pollutants reduced	NOx (0.92 tpy), VOC (2.3 tpy)
Costs	Valley Metro has received approval for a State of Virginia Demonstration Grant to initiate this service. The funding for operating expenses (~$600k) for this project has been secured through Fiscal Year 2006. The funds (~$350k) to purchase new buses for this route have also been secured.
Sources affected	Mobile
Geographical area	Roanoke Region
Implementation date	April 2004 – June 2006
Requires approval by State Air Pollution Control Board?	No
Enforceable?	N/A
Quantifiable?	Yes – The estimated lifespan emissions benefit of this new bus route is 2.767 tons of NOX and 6.96 tons of VOC. The life span for this project is April 2004 through June 2006.
Description of measure	Valley Metro will begin operating a new bus service between Roanoke, Salem, Christiansburg and Blacksburg. Funding for this project has been approved through fiscal year 2006.

Ozone Early Action Plan Control Measure Profile

Title of Measure	**Open Burning**
Specific Project	Several localities currently have a ban on all open burning. Other localities such as County of Roanoke have a permitting process to allow some open burning. In localities where an Open Burning permitting process exists, issuance of permits should be tied to predicted air quality.
Pollutants reduced	NOx VOC
Costs	Denying open burning permits based on predicted air quality would be a function of the fire marshall's office of each locality. There would be few if any financial costs to implement such a policy.
Sources affected	Stationary
Geographical area	Roanoke Region
Implementation date	April 2004 – Ongoing
Requires approval by State Air Pollution Control Board?	No
Enforceable?	Each Fire Marshall would apply in granting permits.
Quantifiable?	Not Known
Description of measure	The Cities of Roanoke and Salem do not allow open burning. However, the counties of Roanoke and Botetourt have an open burning permit process at the discretion of the appropriate local fire marshal. This measure seeks agreement from local fire marshals to make permits conditional on forecasted air quality for the day in question.

Roanoke Valley Area

Ozone Early Action Plan (EAP)
Local Strategies

Section III of III
Lawn and Garden Equipment Strategies

Table of Contents:

Ozone Early Action Plan Control Measure Profile

Overview

Gasoline-powered golf carts and turf care equipment used at public and private golf courses are collectively a source of both ozone precursor pollutants (VOC & NO_X). A local control strategy would consist of voluntary local commitments from a number of area golf courses to replace gasoline-powered golf carts with electric golf carts to reduce ozone precursor emissions. A mandatory measure on this source category is not warranted due to the relatively low reduction potential of such a control measure, and because it would probably require a source of funds for subsidies or other forms of financial assistance.

Title of Measure	**Replacement of gasoline golf carts & turf care equipment with low or zero emitting (electric) equipment**
Pollutants reduced	VOC & NO_X
Costs	Electric golf carts appear to be slightly less expensive than gasoline equivalents. However, some capital investment is required in converting facilities to support the use of electric equipment.
Sources affected	Public & private golf courses.
Geographical area	Entire EAC area.
Implementation date	End of 2005.
Requires approval by State Air Pollution Control Board?	A voluntary program and agreements would not require SAPCB approval.
Enforceable?	Implemented through voluntary agreements.
Quantifiable?	Yes - under development.
Description of measure	Voluntary pilot program at area golf courses to replace gasoline-powered golf carts and turf equipment with low emitting or electric equipment. Each jurisdiction will commit to obtaining a voluntary commitment from one or more golf courses to make the transition from gasoline-powered to electric equipment. Program could have two phases with a firm initial commitment to be included in the early action plan, and a longer second phase as a maintenance measure.

Ozone Early Action Plan Control Measure Profile

Overview

Gasoline-powered lawn mowers and other lawn care equipment used local governments, private companies, and the general public, are collectively a significant source of VOC, NO_X and CO. A local control strategy would consist of a cash incentive program to buyback older working lawn & garden equipment with electric or manual equipment. We will work with willing local governments to commit to the purchase of a certain percent of electric/manual equipment as part of their normal purchasing process.

Title of Measure	**Buy back program for old lawn & garden equipment and the purchase of electric or manual equipment**
Pollutants reduced	VOC, NO_X, & CO
Costs	Cash rebate of $40 to $100 on the purchase of new electric or push mowers or similar L&G equipment (weedwhackers, etc.). $50k program ($50 rebate) could remove 1,000 gas-powered mowers per year.
Sources affected	Local governments, lawn care companies, public
Geographical area	Entire EAC area.
Implementation date	2004/2005.
Requires approval by State Air Pollution Control Board?	A voluntary program and agreement would not require SAPCB approval.
Enforceable?	Could be enforced voluntarily and by mandate depending on source sector.
Quantifiable?	Yes – 10 tons VOC reduction and 80 tons CO reduction
Description of measure	Combination of a voluntary or mandatory program to replace gas-powered Lawn & garden equipment with electric or manual equipment. General public would be targeted through a rebate program and local governments would mandate the purchase of electric equipment. **A definite funding source would have to be identified to implement this control strategy.**

Ozone Early Action Plan Control Measure Profile

Overview

Gasoline-powered lawn & garden equipment used by local governments, private companies, and the general public are collectively a significant source of VOC, NO_X and CO. A local control strategy would consist of a voluntary restriction or moratorium on the operation of lawn & garden equipment on predicted high ozone nonattainment days. This measure would be coordinated with the ozone action days program, and promoted through the overall public education/awareness program established through the early action plan.

Title of Measure	**Episodic restriction on the general use of lawn & garden equipment during predicted ozone nonattainment days.**
Pollutants reduced	VOC & NO_X
Costs	No direct costs, but could result in lost revenue due to decreased activities for private landscaping firms and/or local governments
Sources affected	General public, private landscaping firms, local governments.
Geographical area	Entire EAC area.
Implementation date	2004.
Requires approval by State Air Pollution Control Board?	A voluntary program and agreement would not require SAPCB approval. Any mandatory local requirement (ordinance or other) would require approval.
Enforceable?	Could be enforced voluntarily or by mandate.
Quantifiable?	Yes – under development.
Description of measure	Voluntary and/or mandatory program to restrict the use of gas-powered lawn & garden equipment on ozone action day (days when high ozone is predicted). Program would be voluntary for the general public and private companies. Each jurisdiction will attempt to obtain voluntary compliance of one or more private companies as part of this program. If after 2005 selected indicators (to be determined) show that overall area emission reduction and/or ozone exceedance targets are not being met, the area would consider modifying this control measure to become partially or fully mandatory.

Ozone Early Action Plan Control Measure Profile

Overview

Gasoline-powered lawn & garden equipment used by local governments, private companies, and the general public are collectively a significant source of VOC, NO_X and CO. This local control strategy would consist of a mandatory ban on the operation of lawn & garden equipment by state/local governments on predicted ozone nonattainment days. This measure would be coordinated with the ozone action days program.

Title of Measure	**Episodic ban on the use of lawn & garden equipment by state & local governments during predicted ozone nonattainment days.**
Pollutants reduced	VOC & NO_X
Costs	No direct costs, but could result in lost time for state & local government employees
Sources affected	State & local government entities.
Geographical area	Entire EAC area.
Implementation date	2004.
Requires approval by State Air Pollution Control Board?	A mandatory requirement on state/local governments would be accomplished through internal policies and/or agreements.
Enforceable?	Enforced by mandate.
Quantifiable?	Yes – under development.
Description of measure	Mandatory program to restrict the use of gas-powered lawn & garden equipment on ozone action day (days when high ozone is predicted). Program would be mandatory for state and local governments.

Contingency Measures

The Local Governments and Task Force have great confidence that the Ozone Early Action Plan will be successful. However, as contingency measures, one or more of these measures could be implemented after 2005, in response to continuing exceedances of the ozone standard and/or a shortfall in anticipated emission reductions from the EAP. These measures would require more lead-time for implementation as well as additional work with expanded groups of stakeholders.

OTC Portable Container Rule
This measure is part of a suite of measures designed to reduce VOC emissions. The portable container rule would reduce emissions that result from either spillage or permeation. Additional benefits include potential reduction of water contamination and reduction of potential fire hazards.

OTC Architectural/Industrial Maintenance Coatings Rule
This rule basically requires reformulated coatings to meet lower VOC content limits than under the current federal rule. Manufacturers would be required to assume the primary responsibility to produce coatings that meet or exceed VOC content limits for sale and use at the retail and wholesale levels.

OTC Mobile Equipment Repair and Refinishing Rule
This strategy requires lower VOC content for paints and use of improved transfer efficiency application and cleaning equipment. The rule would apply to primarily small businesses that apply refinishing materials to a variety of mobile equipment repair and refinishing facilities.

Solvent Cleaning Operations Rule
This rule establishes hardware and operating requirements for vapor cleaning machines used to clean metal parts; and also includes volatility restrictions for cold cleaning solvents. Degreasing and solvent cleaning operations are performed by many commercial and industrial facilities.

Truck Stop Electrification
Promoting the electrification of truck stops, rest areas and distribution centers would help reduce unnecessary engine idling. The availability of electrical hook ups would allow powering of cab/sleeper appliances or auxiliary devices without running the engine. The Task Force believes that this measure shows great promise, but may be costly to implement and therefore is scheduled for post 2005.

Appendix A

EAP Supporting Materials

Roanoke Valley Area
Metropolitan Planning Organization
313 Luck Avenue, SW / PO Box 2569 / Roanoke, Virginia 24010
TEL: 540.343.4417 / FAX: 540.343.4416 / www.rvarc.org / rvarc@rvarc.org

The 22nd day of January, 2004

RESOLUTION

Endorsement and Adoption of the Ozone Early Action Plan for the Roanoke Valley Area

WHEREAS, clean air is essential for quality of life, economic development and general public well-being of the Roanoke Valley Area; and,

WHEREAS, the United States Environmental Protection Agency (EPA) established a revised 8-hour ozone standard in 1997 that was set at 0.085 parts per million (ppm), averaged over a three-year period; and,

WHEREAS, the ozone monitoring station in the Roanoke area (in the Town of Vinton) currently has a design value of 0.085 ppm that would qualify the area for the designation of nonattainment area for ozone under the Clean Air Act of 1990; and,

WHEREAS, the EPA has developed and endorsed the air quality planning concept of Early Action Compacts, where an area that marginally exceeds the ozone standard can enter into a voluntary agreement with state and federal governments to develop and implement an Early Action Plan to proactively reduce ozone levels and come into compliance with the standard; and,

WHEREAS, elected officials, representing the Cities of Roanoke and Salem, the Counties of Botetourt and Roanoke and the Town of Vinton, acting through the Roanoke Valley Area Metropolitan Planning Organization entered into an Ozone Early Action Compact with the Virginia Department of Environmental Quality (VDEQ) and the Federal Environmental Protection Agency (EPA) in December 2002; and,

WHEREAS, the Ozone Early Action Compact authorized the establishment of an Early Action Plan Task Force and the development of a regional Early Action Plan consisting of local, state and national strategies to bring the Roanoke Valley Area into attainment with the 8-hour Ozone standard by the year 2007; and,

WHEREAS, in response, the Early Action Plan Task Force has developed and submitted an Early Action Plan for consideration and adoption by the localities that have entered into the Early Action Compact; and,

WHEREAS, the Early Action Plan contains specific commitments and responsibilities to be undertaken by the localities that have entered into the Early Action Compact; and,

WHEREAS, technical analyses conducted by VDEQ and EPA indicate that air quality is expected to improve in the Roanoke Valley Area by the year 2007; and,

WHEREAS, the **Roanoke Valley Area Metropolitan Planning Organization** is fully committed to the regional cooperation and coordination necessary to bring the area into attainment, as measured by the regional Ozone monitor, for the 8-hour Ozone standard in 2007.

THEREFORE BE IT RESOLVED, that on this 22nd day of January of 2004, the **Roanoke Valley Area Metropolitan Planning Organization** officially approves and endorses the regional Ozone Early Action Plan (EAP), and is committed to its implementation and success.

BE IT FURTHER RESOLVED, that a signed copy of this resolution of commitment will be sent to the Director of the Virginia Department of Environmental Quality for processing and inclusion into the official State Implementation Plan, which once approved by EPA will make these commitments and responsibilities federally enforceable.

Don Davis

Don Davis, Chairman
Roanoke Valley Area Metropolitan Planning Organization

CITY OF ROANOKE
OFFICE OF CITY CLERK

215 Church Avenue, S.W., Room 456
Roanoke, Virginia 24011-1536
Telephone: (540) 853-2541
Fax: (540) 853-1145
E-mail: clerk@ci.roanoke.va.us

MARY F. PARKER, CMC
City Clerk

STEPHANIE M. MOON
Deputy City Clerk

SHEILA N. HARTMAN
Assistant City Clerk

February 19, 2004

File #529

Mr. Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 24219

Dear Mr. Burnley:

I am enclosing copy of Resolution No. 36622-021704 endorsing and adopting the Ozone Early Action Plan for the Roanoke Valley Area.

The abovereferenced measure was adopted by the Council of the City of Roanoke at a regular meeting which was held on Tuesday, February 17, 2004.

Sincerely,

Mary F. Parker

Mary F. Parker, CMC
City Clerk

MFP:ew

Enclosure

pc: Wayne G. Strickland, Executive Director, Roanoke Valley Alleghany Regional Commission, P. O. Box 2569, Roanoke, Virginia 24010
Diane S. Childers, Clerk, Roanoke County Board of Supervisors, P. O. Box 29800 Roanoke, Virginia 24018-0798
Gerald A. Burgess, County Administrator, Botetourt County, 1 West Main Street, Box 1, Fincastle, Virginia 24090
Carolyn S. Ross, Clerk, Town of Vinton, 311 S. Pollard Street, Vinton, Virginia 24179
James E. Taliaferro, III, Assistant City Manager, City of Salem, P. O. Box 869 Salem, Virginia 24153
Darlene L. Burcham, City Manager
Jesse A. Hall, Director of Finance
George C. Snead, Jr., Assistant City Manager for Operations
Robert K. Bengtson, Director of Public Works
Paul J. Truntich, Environmental Manager
Kenneth H. King, Transportation Manager

D.T.

IN THE COUNCIL OF THE CITY OF ROANOKE, VIRGINIA

The 17th day of February, 2004.

No. 36622-021704.

A RESOLUTION endorsing and adopting the Ozone Early Action Plan for the Roanoke Valley Area.

WHEREAS, clean air is essential for quality of life, economic development, and the general public well-being of the Roanoke Valley area;

WHEREAS, the United States Environmental Protection Agency (EPA) established a revised 8-hour ozone standard in 1997 that was set at 0.085 parts per million (ppm), averaged over a three-year period;

WHEREAS, the ozone monitoring station in the Roanoke area (in the Town of Vinton) currently has a design value of 0.085 ppm that would qualify the area for the designation of non-attainment area for ozone under the Clean Air Act (CAA) of 1990;

WHEREAS, the EPA has developed and endorsed the air quality planning concept of Early Action Compacts, where an area that marginally exceeds the ozone standard can enter into a voluntary agreement with state and federal governments to develop and implement an Early Action Plan to reduce proactively ozone levels and come into compliance with the standard;

WHEREAS, elected officials representing the Cities of Roanoke and Salem, the Counties of Botetourt and Roanoke, and the Town of Vinton, acting through the Roanoke Valley Area Metropolitan Planning Organization (MPO), entered into an Ozone Early Action Compact with the Virginia Department of Environmental Quality (VDEQ) and the Federal Environmental Protection Agency (EPA) in December 2002;

WHEREAS, the Ozone Early Action Compact authorized the establishment of an Early Action Plan Task Force and the development of a regional Early Action Plan consisting of local,

state and national strategies to bring the Roanoke Valley area into attainment with the 8-hour Ozone standard by 2007;

WHEREAS, in response, the Early Action Plan Task Force has developed and submitted an Early Action Plan for consideration and adoption by the localities that have entered into the Early Action Compact;

WHEREAS, the Early Action Plan contains specific commitments and responsibilities to be undertaken by the localities that have entered into the Early Action Compact;

WHEREAS, technical analyses conducted by VDEQ and EPA indicate that air quality is expected to improve in the Roanoke Valley area by 2007;

WHEREAS, the City Council of the City of Roanoke is fully committed to fulfill these specific commitments and responsibilities under the Ozone Early Action Plan; and

WHEREAS, furthermore, the City Council is fully committed to the regional cooperation and coordination necessary to bring the area into attainment, as measured by the regional Ozone monitor, for the 8-hour Ozone standard in 2007.

THEREFORE, BE IT RESOLVED by the Council the City of Roanoke as follows:

1. City Council hereby adopts, approves, and endorses the regional Ozone Early Action Plan (EAP) dated January 22, 2004, which was attached to the City Manager's letter to Council dated February 17, 2004, including any minor changes that may be made to such EAP, and is committed to its implementation and success.

2. The City Manager is authorized to take such actions and execute such documents as may be necessary for the implementation and administration of such EAP, including any modification to such EAP.

3. The City Clerk is directed to send a signed copy of this resolution of commitment from the City of Roanoke to the Director of the Virginia Department of Environmental Quality for processing and inclusion into the official State Implementation Plan, which once approved by EPA will make these commitments and responsibilities federally enforceable.

ATTEST:

Mary F. Parker

City Clerk.

ROANOKE

Office of the City Manager
Noel C. Taylor Municipal Building
215 Church Avenue, S.W., Room 364
Roanoke, Virginia 24011
540-853-2333 fax: 540-853-1138

COPY

February 19, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, VA 23219

Re: City of Roanoke's Commitment to Reducing Ozone Levels within the Roanoke Valley

Dear Director Burnley:

The Roanoke Valley region faces a complex challenge regarding our air quality. Not only is the region scheduled to be classified as a non-attainment area under the eight-hour ozone standard, but our poor air quality also threatens the health of everyone living and working in this region. In addition to causing increased respiratory and other public health problems for our citizens, failure to address our air quality problems could result in the imposition of sanctions that would jeopardize the expansion of our region's highway and mass transit systems and adversely affect the economic well being of our region.

For these reasons, the elected leadership of the Roanoke Valley Area Metropolitan Planning Organization (MPO) entered into an Ozone Early Action Compact (EAC) with the Virginia Department of Environmental Quality (VDEQ) and the Federal Environmental Protection Agency (EPA). The MPO is developing an Ozone Early Action Plan (EAP) which includes proposals to improve air quality. These proposals require action by the City of Roanoke, not only in the role of a government responsible for implementing public programs to reduce air pollution, but also as a large corporate entity whose actions will impact regional air quality. The City of Roanoke takes these responsibilities very seriously. We believe that meeting the federal air quality standard for ozone is a high priority. Though we are acting in conjunction with the regional efforts being undertaken by the MPO, we must also lead the way for others to follow.

Consistent with this responsibility, the City of Roanoke has initiated several measures to implement the strategies contained in the EAP. Select examples include procurement of alternative fuel compatible vehicles, commitment to fuel fleet vehicles early in the morning or late in the evening, development of an Urban Forestry Plan, and restrictions on use of gasoline powered lawn and garden equipment on predicted high ozone days.

Furthermore, various City departments/offices have collaborated on the development of ozone reducing strategies and will be responsible for ensuring that the City's commitments to the provisions specified within the EAP are fulfilled. The specific City departments/offices are as follows: Department of Parks and Recreation, Transportation Division, Fleet Management Division, Office of Communications, and Office of Environmental & Emergency Management.

The City of Roanoke's commitments are being undertaken in order to contribute to the reduction of ozone in the Roanoke Valley, in accordance with the EAP. While future actions depend on future budgets, as you can see, the City has already taken significant steps. If you have any questions or require additional information regarding our involvement, please contact Paul Truntich, the City's Environmental Administrator, at 540/853-1173.

Sincerely,

Darlene L. Burcham
City Manager

DLB:pjt

c: ✓ Wayne Strickland, RVARC
Paul Truntich, Environmental Administrator

CITY OF SALEM, VIRGINIA
114 NORTH BROAD STREET
OFFICE OF CITY MANAGER P. O. BOX 869 24153-0869
(540) 375-3016

February 3, 2004

Mr. Mark McCaskill
Roanoke Valley-Alleghany
Regional Commission
P. O. Box 2569
Roanoke, VA 24010

Dear Mr. McCaskill:

The Council of the City of Salem at its regular meeting held on January 29, 2004, adopted Resolution 1023 officially approving and endorsing the regional Ozone Early Action Plan (EAP) and stating Salem's commitment to its implementation and success.

If you have any questions, please do not hesitate to contact me.

Sincerely,

James E. Taliaferro, II
Assistant City Manager

JET:jcb
Enclosure

IN THE COUNCIL OF THE CITY OF SALEM, VIRGINIA, JANUARY 29, 2004:

RESOLUTION 1023

ENDORSEMENT AND ADOPTION OF THE OZONE EARLY ACTION PLAN FOR THE ROANOKE VALLEY AREA.

WHEREAS, clean air is essential for quality of life, economic development and general public well-being of the Roanoke Valley Area; and,

WHEREAS, the United States Environmental Protection Agency (EPA) established a revised 8-hour ozone standard in 1997 that was set at 0.085 parts per million (ppm), averaged over a three-year period; and

WHEREAS, the ozone monitoring station in the Roanoke area (in the Town of Vinton) currently has a design value of 0.085 ppm that would qualify the area for the designation of nonattainment area for ozone under the Clean Air Act of 1990; and

WHEREAS, the EPA has developed and endorsed the air quality planning concept of Early Action Compacts, where an area that marginally exceeds the ozone standard can enter into a voluntary agreement with state and federal governments to develop and implement an Early Action Plan to proactively reduce ozone levels and come into compliance with the standard; and

WHEREAS, elected officials, representing the Cities of Roanoke and Salem, the Counties of Botetourt and Roanoke and the Town of Vinton, acting through the Roanoke Valley Area Metropolitan Planning Organization entered into an Ozone Early Action Compact with the Virginia Department of Environmental Quality (VDEQ) and the Federal Environmental Protection Agency (EPA) in December 2002; and

WHEREAS, the Ozone Early Action Compact authorized the establishment of an Early Action Plan Task Force and the development of a regional Early Action Plan consisting of local, state and national strategies to bring the Roanoke Valley Area into attainment with the 8-hour Ozone standard by the year 2007; and

WHEREAS, in response, the Early Action Plan Task Force has developed and submitted an Early Action Plan for consideration and adoption by the localities that have entered into the Early Action Compact; and

WHEREAS, the Early Action Plan contains specific commitments and responsibilities to be undertaken by the localities that have entered into the Early Action Compact; and

WHEREAS, technical analyses conducted by VDEQ and EPA indicate that air quality is expected to improve in the Roanoke Valley Area by the year 2007; and

WHEREAS, the City of Salem is fully committed to fulfill these specific commitments and responsibilities under the Ozone Early Action Plan; and

WHEREAS, furthermore, the City of Salem is fully committed to the regional cooperation and coordination necessary to bring the area into attainment, as measured by the regional Ozone monitor, for the 8-hour Ozone standard in 2007; NOW, THEREFORE,

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF SALEM, VIRGINIA, that the City of Salem officially approves and endorses the regional Ozone Early Action Plan (EAP), and is committed to its implementation and success.

BE IT FURTHER RESOLVED, that a certified copy of this resolution of commitment will be sent to the Director of the Virginia Department of Environmental Quality for processing and inclusion into the official State Implementation Plan, which once approved by EPA will make these commitments and responsibilities federally enforceable.

Upon a call for an aye and a nay vote, the same stood as follows:

Gerald M. Pace - Aye
John C. Givens - Aye
Howard C. Packett - Aye
Alexander M. Brown - Aye
Carl E. Tarpley, Jr. - Aye

ATTEST:

James E. Taliaferro, II
Clerk of Council
City of Salem, Virginia

County of Roanoke

P.O. BOX 29800
5204 BERNARD DRIVE
ROANOKE, VIRGINIA 24018-0798
(540) 772-2005
FAX (540) 772-2193

DIANE S. CHILDERS
CLERK TO THE BOARD
Email: dchilders@co.roanoke.va.us

BRENDA J. HOLTON, CMC
DEPUTY CLERK
Email: bholton@co.roanoke.va.us

January 29, 2004

Mr. Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, VA 23219

Dear Director Burnley:

Attached is a certified copy of Resolution 012704-1 endorsing and adopting the Ozone Early Action Plan for the Roanoke Valley area. This action was approved by the Board of Supervisors at their meeting on Tuesday, January 27, 2004.

If you need further information, please do not hesitate to contact me.

Sincerely,

Diane S. Childers

Diane S. Childers
Clerk to the Board of Supervisors

Attachment
cc: Wayne Strickland, Executive Director, Roanoke Valley-Alleghany Regional Commission
Arnold Covey, Director, Community Development
Anne Marie Green, Director, General Services
Jim Vodnik, Assistant Director, General Services
Paul M. Mahoney, County Attorney

AT A REGULAR MEETING OF THE BOARD OF SUPERVISORS OF ROANOKE COUNTY, VIRGINIA, HELD AT THE ROANOKE COUNTY ADMINISTRATION CENTER ON TUESDAY, JANUARY 27, 2004

RESOLUTION 012704-1 ENDORSING AND ADOPTING THE OZONE EARLY ACTION PLAN FOR THE ROANOKE VALLEY AREA

WHEREAS, clean air is essential for quality of life, economic development and general public well-being of the Roanoke Valley Area; and,

WHEREAS, the United States Environmental Protection Agency (EPA) established a revised 8-hour ozone standard in 1997 that was set at 0.085 parts per million (ppm), averaged over a three-year period; and,

WHEREAS, the ozone monitoring station in the Roanoke area (in the Town of Vinton) currently has a design value of 0.085 ppm that would qualify the area for the designation of non-attainment area for ozone under the Clean Air Act (CAA) of 1990; and,

WHEREAS, the EPA has developed and endorsed the air quality planning concept of Early Action Compacts, where an area that marginally exceeds the ozone standard can enter into a voluntary agreement with state and federal governments to develop and implement an Early Action Plan to proactively reduce ozone levels and come into compliance with the standard; and,

WHEREAS, elected officials, representing the Cities of Roanoke and Salem, the Counties of Botetourt and Roanoke and the Town of Vinton, acting through the Roanoke Valley Area Metropolitan Planning Organization (MPO) entered into an Ozone Early Action Compact with the Virginia Department of Environmental Quality (VDEQ) and the Federal Environmental Protection Agency (EPA) in December 2002; and,

WHEREAS, the Ozone Early Action Compact authorized the establishment of an Early Action Plan Task Force and the development of a regional Early Action Plan consisting of local, state and national strategies to bring the Roanoke Valley Area into attainment with the 8-hour Ozone standard by 2007; and,

WHEREAS, in response, the Early Action Plan Task Force has developed and submitted a Early Action Plan for consideration and adoption by the localities that have entered into the Early Action Compact; and,

WHEREAS, the Early Action Plan contains specific commitments and responsibilities to be undertaken by the localities that have entered into the Early Action Compact; and,

WHEREAS, technical analyses conducted by VDEQ and EPA indicate that air quality is expected to improve in the Roanoke Valley area by 2007; and,

WHEREAS, the Board of Supervisors of Roanoke County is fully committed to fulfill these specific commitments and responsibilities under the Ozone Early Action Plan; and,

WHEREAS, furthermore, the Board of Supervisors is fully committed to the regional cooperation and coordination necessary to bring the area into attainment, as measured by the regional Ozone monitor, for the 8-hour Ozone standard in 2007.

NOW, THEREFORE, BE IT RESOLVED, that on this 27th day of January, 2004, the Board of Supervisors of Roanoke County, Virginia, officially approves and endorses the regional Ozone Early Action Plan (EAP), and is committed to its implementation and success.

AND BE IT FURTHER RESOLVED, that a signed copy of this resolution of commitment from Roanoke County will be sent to the Director of the Virginia Department of Environmental Quality for processing and inclusion into the official State Implementation Plan, which once approved by EPA will make these commitments and responsibilities federally enforceable.

On motion of Supervisor Church to adopt the resolution, and carried by the following recorded vote:

AYES: Supervisors McNamara, Church, Wray, Altizer, Flora

NAYS: None

A COPY TESTE:

Brenda J. Holton

Brenda J. Holton, CMC
Deputy Clerk to the Board of Supervisors

cc: File
Robert Burnley, Director, Virginia Department of Environmental Quality
Wayne Strickland, Executive Director, Roanoke Valley-Alleghany Regional Commission
Arnold Covey, Director, Community Development
Anne Marie Green, Director, General Services
Jim Vodnik, Assistant Director, General Services
Paul Mahoney, County Attorney

County of Roanoke
Board of Supervisors

P.O. BOX 29800
5204 BERNARD DRIVE
ROANOKE, VA 24018-0798

January 23, 2004

Mr. Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Dear Director Burnley:

As a member of the Roanoke Valley Area Metropolitan Planning Organization and a participant in the Ozone Early Action Compact with the Virginia DEQ and the Federal Environmental Protection Agency, the County of Roanoke and its staff are involved in a number of voluntary measures to reduce Ozone in the Valley. One measure we have implemented for our staff that is included in the EAP is in the arena of education and environmental awareness training. By our estimate, County driving, including employee commuting results in over 9,000,000 miles driven and 8500 tons of air pollution per year.

In order to reduce the impact of our driving, our Environmental Assessment Team has developed and informational brochure that is distributed to all full and part-time employees. This contains tips on how to drive in such a way as to reduce air pollution and encourages car-pooling. In addition to this, all staff who drive a County vehicle or personal vehicle on County business will receive environmental driver training between now and June 30, 2004. The result of this effort is the creation of a heightened sense of awareness of the impact of vehicles on our air quality in over 1200 individual employees. By implementing this and other measures it is our belief that we will be able to significantly improve the air quality in the Roanoke Valley.

Sincerely,

Richard C. Flora

Richard C. Flora, Chairman
Roanoke County Board of Supervisors

cc: Board Members
Elmer C. Hodge, County Administrator
Wayne Strickland, Executive Director – RVARC

OFFICE: (540) 772-2005
FAX: (540) 772-2193
VOICE MAIL: (540) 772-2170
E-MAIL: bos@co.roanoke.va.us

County of Roanoke

Board of Supervisors

P.O. BOX 29800
5204 BERNARD DRIVE
ROANOKE, VA 24018-0798

March 8, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Re: Replace Gasoline Golf Equipment with Electric

Dear Director Burnley:

The County of Roanoke and its citizens are committed to improving the air quality of our valley. In this regard, the County of Roanoke and staff will participate in a number of the control measures described in the Ozone Early Action Plan put forth by the Roanoke Valley Area Metropolitan Planning Organization. This letter is in regard to convincing our regions golf courses to convert to electric powered golf carts and turf equipment.

At this time, there are three golf courses in Roanoke County. Of these, one already uses electric golf carts exclusively and one is a par three and has no carts. In support of this objective, we will contact the remaining course and explain the benefits of switching to electric golf carts in an attempt to convince them to convert to electric carts to further the objectives of the Early Action Plan.

Sincerely,

Richard C. Flora, Chairman
Roanoke County Board of Supervisors

cc. Wayne Strickland, Executive Director, RVARC
Members, Board of Supervisors
Elmer C. Hodge, County Administrator

OFFICE:
(540) 772-2005

FAX:
(540) 772-2193

VOICE MAIL:
(540) 772-2170

E-MAIL:
bos@co.roanoke.va.us

County of Roanoke

Board of Supervisors

P.O. BOX 29800
5204 BERNARD DRIVE
ROANOKE, VA 24018-0798

March 8, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Re: Episodic Restriction of Gasoline Lawn Equipment

Dear Director Burnley:

In cooperation with the Virginia DEQ and the Federal Environmental Protection Agency, the County of Roanoke and its citizens are working diligently to improve the air quality of the region. One of the measures of the Early Action Plan (EAP) involves a voluntary ban of gasoline powered lawn and garden equipment on ozone action days. The County of Roanoke will encourage its citizens to comply with the voluntary ban of gasoline powered lawn equipment on ozone action days. In addition, we will enlist voluntary compliance from commercial lawn maintenance contractors doing business with and in the County.

We believe that these measures, in conjunction with the many other efforts being undertaken, will significantly reduce ozone precursors resulting from lawn and garden maintenance activities and ultimately achieve the goals of the EAP which means better air quality for the region.

Sincerely,

Richard C. Flora, Chairman
Roanoke County Board of Supervisors

cc. Wayne Strickland, Executive Director, RVARC
Members, Board of Supervisors
Elmer C. Hodge, County Administrator

OFFICE:
(540) 772-2005

FAX:
(540) 772-2193

VOICE MAIL:
(540) 772-2170

E-MAIL:
bos@co.roanoke.va.us

County of Roanoke
Board of Supervisors

P.O. BOX 29800
5204 BERNARD DRIVE
ROANOKE, VA 24018-0798

March 8, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Re: Fleet Refueling Early and Late

Dear Director Burnley:

As a member of the Roanoke Valley Area Metropolitan Planning Organization and a participant in the Ozone Early Action Compact, the County of Roanoke and its citizens are committed to improving the air quality of our valley. The effect of Volatile Organic Compounds (VOCs) in the production of ozone is a known fact and a variety of measures are described in the Early Action Plan (EAP) to reduce them. One activity that has been demonstrated to reduce the quantity and impact of VOCs is refueling in the cooler, darker periods of predawn and evening.

Therefore, the County Administrator will direct staff to refuel all County vehicles before 8 AM and after 5 PM on ozone alert days. There may be occasions when public safety vehicles may be exempted from this requirement. We will also request that staff voluntarily refuel personal vehicles before 8 AM and after 5 PM.

The County has a large vehicle fleet, consisting of almost 500 vehicles and believes that altering our fueling activities will contribute to reduced ozone levels as well as serve as an example for the general public.

Sincerely,

Richard C. Flora

Richard C. Flora, Chairman
Roanoke County Board of Supervisors

cc. Wayne Strickland, Executive Director, RVARC
Members, Board of Supervisors
Elmer C. Hodge, County Administrator

OFFICE: (540) 772-2005
FAX: (540) 772-2193
VOICE MAIL: (540) 772-2170
E-MAIL: bos@co.roanoke.va.us

County of Roanoke

Board of Supervisors

P.O. BOX 29800
5204 BERNARD DRIVE
ROANOKE, VA 24018-0798

Richard C. Flora, Chairman
Hollins Magisterial District
Michael W. Altizer, Vice-Chairman
Vinton Magisterial District

Joseph B. "Butch" Church
Catawba Magisterial District
Joseph McNamara
Windsor Hills Magisterial District
Michael A. Wray
Cave Spring Magisterial District

March 8, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Re: Tree Canopy/Urban Forestry

Dear Director Burnley:

As a member of the Roanoke Valley Area Metropolitan Planning Organization and a participant in the Ozone Early Action Compact, the County of Roanoke and its citizens are committed to improving the air quality of our valley. The benefit of trees in the reduction of ozone is a known fact and one of the measures described in the Early Action Plan (EAP) addresses this variable. Typically, urbanization results in a dramatic reduction of tree canopy, however, we will attempt to reverse this trend in Roanoke County by introducing changes in our Comprehensive Plan that acknowledge the importance of the urban tree canopy. Several specific measures we will undertake include the following:

- Plant at least 100 additional trees in the County Parks annually.
- Require advance approval for the removal of any tree on County property from our Tree Committee.
- Consider adding requirements in the permitting process requiring developers and buildings to protect existing trees and creating plans that result in no net loss to the existing tree count.
- Seek funding to establish an urban forester position in our Parks Department.

We at the County of Roanoke feel that these measures will gather momentum not only because of the importance of trees to our air quality but also due to the fact that trees add so much beauty to our neighborhoods and provide a significant benefit to the overall quality of life.

Sincerely,

Richard C. Flora

Richard C. Flora, Chairman
Roanoke County Board of Supervisors

cc. Wayne Strickland, Executive Director, RVARC
Members, Board of Supervisors
Elmer C. Hodge, County Administrator

OFFICE: (540) 772-2005
FAX: (540) 772-2193
VOICE MAIL: (540) 772-2170
E-MAIL: bos@co.roanoke.va.us

County of Roanoke

Board of Supervisors

P.O. BOX 29800
5204 BERNARD DRIVE
ROANOKE, VA 24018-0798

March 8, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Re: Education and Training

Dear Director Burnley:

As a member of the Roanoke Valley Area Metropolitan Planning Organization and a participant in the Ozone Early Action Compact with the Virginia DEQ and the Federal Environmental Protection Agency, the County of Roanoke and its staff are involved in a number of voluntary measures to reduce ozone in the valley. One measure we have implemented for our staff that is included in the Early Action Plan (EAP) is in the arena of education and environmental awareness training. By our estimate County driving, including employee commuting, results in over 9,000,000 miles driven and 8,500 tons of air pollution per year.

In order to reduce the impact of our driving, our Environmental Assessment Team has developed an informational brochure that is distributed to all full and part-time employees. This contains tips on how to drive in such a way as to reduce air pollution and encourages car-pooling. In addition to this, all staff who drive a County vehicle or personal vehicle on County business will receive environmental driver training between now and June 30, 2004. The result of this effort is the creation of a heightened sense of awareness of the impact of vehicles on our air quality in over 1,200 individual employees. By implementing this and other measures it is our belief that we will be able to significantly improve the air quality in the Roanoke Valley.

Sincerely,

Richard C. Flora, Chairman
Roanoke County Board of Supervisors

cc. Wayne Strickland, Executive Director, RVARC
Members, Board of Supervisors
Elmer C. Hodge, County Administrator

OFFICE: (540) 772-2005
FAX: (540) 772-2193
VOICE MAIL: (540) 772-2170
E-MAIL: bos@co.roanoke.va.us

County of Roanoke
Board of Supervisors

P.O. BOX 29800
5204 BERNARD DRIVE
ROANOKE, VA 24018-0798

Richard C. Flora, Chairman
Hollins Magisterial District
Michael W. Altizer, Vice-Chairman
Vinton Magisterial District

Joseph B. "Butch" Church
Catawba Magisterial District
Joseph McNamara
Windsor Hills Magisterial District
Michael A. Wray
Cave Spring Magisterial District

March 8, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Re: Bicycle Infrastructure and Amenities

Dear Director Burnley:

The County of Roanoke and its citizens are committed to improving the air quality of our valley. As a member of the Roanoke Valley Area Metropolitan Planning Organization and a participant in the Ozone Early Action Compact, we are optimistic about our chances for effecting significant reductions in the regional ozone levels.

Increased bicycle infrastructure and amenities including bike lanes, greenways, and bike racks at public buildings will encourage the increased incidence of bicycle commuting and inevitably reduce the numbers of cars and trucks on the road. Subsequently, we will be installing bike racks at our buildings and parks as well as encouraging our employees to commute by bicycle, where feasible.

Measures to increase bicycle infrastructure and amenities are illustrated in our updated Comprehensive Plan. The following excerpts pertinent to the County's objectives were taken from the Transportation Element of the latest update of the Comprehensive Plan:

- To complete a network of bikeways that serves bicyclists' needs, especially for travel to employment centers, commercial districts, transit stations, institutions, and recreational destinations;
- To provide bikeway facilities that are appropriate to the street classifications, traffic volumes, and speed of traffic;
- To develop and implement education and encouragement plans aimed at youth, adult cyclists, and motorists; and to increase public awareness of the benefits of bicycling and of available resources and facilities;
- To encourage bicycle parking and related facilities as part of all new construction or major renovation, including office, retail, industrial, and housing developments;
- To encourage the construction of showers and changing facilities in all new or renovated commercial development;

OFFICE: (540) 772-2005
FAX: (540) 772-2193
VOICE MAIL: (540) 772-2170
E-MAIL: bos@co.roanoke.va.us

- To encourage bicycle parking facilities at all park-and-ride lots, commercial developments, and selected parking lots (such as bicycle parking facilities at public spaces such as County buildings, museums, libraries and civic centers).

Additionally, we are including comments on the "Financially Constrained" and "Vision" list of the soon to be submitted *Roanoke Valley Area Metropolitan Planning Organization Long Range Transportation Plan 2025* pertaining to recommended bicycle accommodations and the inclusion of such on each County project in the Plan. This is one illustration of our desire to offer bicycle infrastructure and amenities to our citizens and to plan for the allocation of necessary funds.

We are confident that our efforts, in concert with the other local governments in the Roanoke Valley, can make a difference and have a positive impact on the regional ozone levels. We are committed to increasing bicycle infrastructure and amenities in Roanoke County and to improving the air quality of our valley by participating in the Ozone Early Action Compact.

Sincerely,

Richard C. Flora, Chairman
Roanoke County Board of Supervisors

cc. Wayne Strickland, Executive Director, RVARC
Members, Board of Supervisors
Elmer C. Hodge, County Administrator

County of Roanoke
Board of Supervisors

P.O. BOX 29800
5204 BERNARD DRIVE
ROANOKE, VA 24018-0798

Richard C. Flora, Chairman
Hollins Magisterial District
Michael W. Altizer, Vice-Chairman
Vinton Magisterial District

Joseph B. "Butch" Church
Catawba Magisterial District
Joseph McNamara
Windsor Hills Magisterial District
Michael A. Wray
Cave Spring Magisterial District

March 8, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Re: Episodic Ban of Gasoline Lawn Equipment on Ozone Action Days.

Dear Director Burnley:

The County of Roanoke and its staff are committed to implementing the Ozone Early Action Compact with the Virginia DEQ and the Federal Environmental Protection Agency. In an effort to reduce ozone to safe levels, the County of Roanoke and staff will support a variety of control measures described in the Early Action Plan (EAP). Use of gasoline powered mowing equipment has been identified as one contributor to ozone formation and as such, restricting this activity is expected to have an impact on the region's air quality.

The County of Roanoke owns and maintains hundreds of acres of parks and green spaces all of which require maintenance. We operate dozens of pieces of petroleum powered equipment 5-6 days a week during the growing season. In support of the EAP, we will ban the use of all gasoline and diesel powered landscape maintenance equipment on ozone action days.

Measures such as this, in conjunction with other regional efforts, will have a direct and immediate benefit in the effort to reduce ozone levels in the Roanoke Valley.

Sincerely,

Richard C. Flora

Richard C. Flora, Chairman
Roanoke County Board of Supervisors

cc. Wayne Strickland, Executive Director, RVARC
Members, Board of Supervisors
Elmer C. Hodge, County Administrator

OFFICE:
(540) 772-2005

FAX:
(540) 772-2193

VOICE MAIL:
(540) 772-2170

E-MAIL:
bos@co.roanoke.va.us

County of Roanoke
Board of Supervisors

P.O. BOX 29800
5204 BERNARD DRIVE
ROANOKE, VA 24018-0798

March 8, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Re: Air Quality Action Day

Dear Director Burnley:

In recognition of the Roanoke Valley Ozone Early Action Compact with the Virginia DEQ and the Federal Environmental Protection Agency, the County of Roanoke and its citizens are committed to improving the air quality of our valley. In an effort to reduce ozone to safe levels, the County of Roanoke and staff will support control measures described in the Early Action Plan (EAP). It is our intention to initiate a variety of activities in support of "Air Quality Action Days" that will alter and reduce activities that increase the generation of ozone precursors. Steps that Roanoke County will take include:

- Education of citizens and staff on how to reduce ozone
- Distribution of air quality education materials to staff
- Posting daily ozone forecast for staff and on the County Website
- Appoint a staff person to implement air quality activities
- Promote carpooling, telecommuting, reduce use of VOC's
- Encourage businesses to support Air Quality Action Days

It is our belief these measures, in conjunction with other efforts, will have a significant impact on activities and attitudes of our employees and citizens, resulting in new behaviors that will achieve the goals of the EAP.

Sincerely,

Richard C. Flora

Richard C. Flora, Chairman
Roanoke County Board of Supervisors

cc. Wayne Strickland, Executive Director, RVARC
Members, Board of Supervisors
Elmer C. Hodge, County Administrator

OFFICE: (540) 772-2005
FAX: (540) 772-2193
VOICE MAIL: (540) 772-2170
E-MAIL: bos@co.roanoke.va.us

County of Roanoke
Board of Supervisors

P.O. BOX 29800
5204 BERNARD DRIVE
ROANOKE, VA 24018-0798

Richard C. Flora, Chairman
Hollins Magisterial District
Michael W. Altizer, Vice-Chairman
Vinton Magisterial District

Joseph B. "Butch" Church
Catawba Magisterial District
Joseph McNamara
Windsor Hills Magisterial District
Michael A. Wray
Cave Spring Magisterial District

March 8, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Re: Purchase of Low Emission Vehicles

Dear Director Burnley:

As a member of the Roanoke Valley Area Metropolitan Planning Organization and a participant in the Ozone Early Action Compact with the Virginia DEQ and the Federal Environmental Protection Agency, the County of Roanoke and its citizens are committed to improving the air quality of our valley. In this regard, the County of Roanoke and staff will participate in a number of the control measures described in our Early Action Plan (EAP). This letter is directed specifically to our commitment to improve the environmental performance of the Roanoke County Fleet.

It is our intention to purchase at least five (5) hybrid vehicles in our 2004/2005 fiscal year, beginning in July 2004. In addition, all other replacement vehicles will be the cleanest burning, most economical type available in their class. Our target for replacement of older vehicles is an increase in fuel efficiency of 25% per vehicle. Thereafter, we will continue this trend with the replacement of at least two conventional vehicles per year with hybrid or alternative fuel, low emissions vehicles. It is our belief that this and other measures being put forth in the EAP will achieve the stated goals of significantly improved air quality in the Roanoke Valley.

Sincerely,

Richard C. Flora

Richard C. Flora, Chairman
Roanoke County Board of Supervisors

cc: Wayne Strickland, Executive Director, RVARC
Members, Board of Supervisors
Elmer C. Hodge, County Administrator

OFFICE: (540) 772-2005
FAX: (540) 772-2193
VOICE MAIL: (540) 772-2170
E-MAIL: bos@co.roanoke.va.us

County of Roanoke
Board of Supervisors

P.O. BOX 29800
5204 BERNARD DRIVE
ROANOKE, VA 24018-0798

Richard C. Flora, Chairman
Hollins Magisterial District
Michael W. Altizer, Vice-Chairman
Vinton Magisterial District

Joseph B. "Butch" Church
Catawba Magisterial District
Joseph McNamara
Windsor Hills Magisterial District
Michael A. Wray
Cave Spring Magisterial District

March 8, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Re: Buyback/Purchase of Manual or Electric Lawn Equipment

Dear Director Burnley:

As a participant in the Roanoke Valley Ozone Early Action Compact with the Virginia DEQ and the Federal Environmental Protection Agency, the County of Roanoke and its citizens are working diligently to improve the air quality of the region. One of the measures we have adopted to reduce ozone to safe levels involves buyback of older gasoline powered lawn and garden equipment and replacement with electric or manual alternatives. The County of Roanoke and its Parks staff will purchase and utilize non-gasoline powered, electric or manual equipment to the extent practicable. In addition, where use of electric or manual equipment may not be feasible, we will replace old gas equipment with the cleanest burning, most efficient lawn and garden equipment available.

We believe that these measures, in conjunction with the many other efforts being undertaken, will significantly reduce ozone precursors resulting from lawn and garden maintenance activities and ultimately achieve the goals of the EAP which means better air quality for the region.

Sincerely,

Richard C. Flora

Richard C. Flora, Chairman
Roanoke County Board of Supervisors

cc. Wayne Strickland, Executive Director, RVARC
Members, Board of Supervisors
Elmer C. Hodge, County Administrator

OFFICE: (540) 772-2005
FAX: (540) 772-2193
VOICE MAIL: (540) 772-2170
E-MAIL: bos@co.roanoke.va.us

County of Roanoke
Board of Supervisors

P.O. BOX 29800
5204 BERNARD DRIVE
ROANOKE, VA 24018-0798

Richard C. Flora, Chairman
Hollins Magisterial District
Michael W. Altizer, Vice-Chairman
Vinton Magisterial District

Joseph B. "Butch" Church
Catawba Magisterial District
Joseph McNamara
Windsor Hills Magisterial District
Michael A. Wray
Cave Spring Magisterial District

March 8, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Re: Open Burning

Dear Director Burnley:

The County of Roanoke is pleased to be a signatory and a key participant in the Ozone Early Action Compact with the Virginia DEQ and the Federal Environmental Protection Agency. One measure of the Early Action Plan (EAP) we are supporting is the restriction of open burning. Under the current ordinance, some open burning of brush is permissible in "non residential" areas, subject to obtaining a permit from the Fire Marshal. This is allowable provided the State Forestry Department has not issued a ban. In order to improve the air quality in the Roanoke Valley, the County of Roanoke will institute measures that will restrict open burning through the office of the County Fire Marshall. The following measures will be implemented as a result of the Early Action Plan:

- Ban all open burning in Roanoke County on forecasted and actual ozone action days.
- Cause violators to extinguish any debris fires detected during ozone action days.
- Issue warnings to violators via the office of the Fire Marshall.

Furthermore, in order to offset opening burning restrictions, the County has free brush and yard waste pick up available to County Residents that virtually eliminates the need to burn brush.

Sincerely,

Richard C. Flora

Richard C. Flora, Chairman
Roanoke County Board of Supervisors

cc. Wayne Strickland, Executive Director, RVARC
Members, Board of Supervisors
Elmer C. Hodge, County Administrator

OFFICE: (540) 772-2005
FAX: (540) 772-2193
VOICE MAIL: (540) 772-2170
E-MAIL: bos@co.roanoke.va.us

County of Roanoke
Board of Supervisors

P.O. BOX 29800
5204 BERNARD DRIVE
ROANOKE, VA 24018-0798

March 8, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Re: Media and Public Relations

Dear Director Burnley:

The County of Roanoke is pleased to participate in the Ozone Early Action Compact with surrounding localities, the Virginia DEQ and the Federal Environmental Protection Agency. One area involving the Early Action Plan (EAP) that we strongly support is "Media and Public Relations Regarding Air Quality Action Days". Roanoke County has a Public Information Officer (PIO) and through her office we intend to educate and keep our citizens informed on this issue.

Our PIO will place updates on our county website and work closely with the local news media to relay timely ozone information to our citizens. The PIO also works with Roanoke Valley Television (RVTV 3), the area's government access channel which provides a wonderful venue to educate our citizens. The RVTV staff will be able to produce ozone related public service announcements on our behalf. RVTV also assists our Public Information Officer with producing a monthly show, and we intend to use this show to filter information to the public about air quality and related topics during the two (2) year cycle of the EAP.

Sincerely,

Richard C. Flora, Chairman
Roanoke County Board of Supervisors

cc. Wayne Strickland, Executive Director, RVARC
Members, Board of Supervisors
Elmer C. Hodge, County Administrator

OFFICE: (540) 772-2005
FAX: (540) 772-2193
VOICE MAIL: (540) 772-2170
E-MAIL: bos@co.roanoke.va.us

Use the Recommended Grade of Motor Oil. You can improve your gas mileage by 1-2 % by using the manufacturer's recommended grade of motor oil. For example, using 10W-30 motor oil in an engine designed to use 5W-30 can lower your gas mileage by 1-2 %. Using 5W-30 in an engine designed for 5W-20 can lower your gas mileage by 1-1.5 %.

Look for motor oil that says "Energy Conserving" on the API performance symbol to be sure it contains friction-reducing additives.

Planning & Combining Trips

Cars are getting cleaner—but people are driving more. Avoid unnecessary driving by combining errands into one trip. Consolidate trips to destinations that are near one another. Once you arrive, park in a central location and walk between destinations. Save errands for one afternoon and plan your trip so you don't retrace your route. You not only save gas this way, but also reduce wear-and-tear on your car.

Commuting. If you can stagger your work hours to avoid peak rush hours, you'll spend less time sitting in traffic and consume less fuel. If you own more than one vehicle, drive the one that gets the best gas mileage whenever possible.

Traveling. A roof rack or carrier provides additional cargo space and may allow you to meet your needs with a smaller car. However, a loaded roof rack can decrease your fuel economy by 5%. Reduce aerodynamic drag and improve your fuel economy by placing items inside the trunk whenever possible

Avoid carrying unneeded items, especially heavy ones. An extra 100 lbs in the trunk reduces a typical car's fuel economy by 1-2%.

Carpool. Ride-sharing is an ideal way to reduce your personal contribution to pollution. If possible, take advantage of carpools and ride-share programs. You can cut your weekly fuel costs in half and save wear on your car if you take turns driving with other commuters.

In the Roanoke area, contact RideSolutions at (540) 342-9393 or http://www.RideSolutions.org.

Thinking About a New Vehicle?

www.fueleconomy.gov has gas mileage estimates and more information for 1985-2003 model year cars. Selecting which vehicle to purchase is the most important fuel economy decision you'll make. The difference between a car that gets 20 MPG and one that gets 30 MPG amounts to $1,500 over 5 years. *

Even within a size class, there is a tremendous range of MPGs to choose from. For example, similar 2003 model year compact cars range from 21 to 45 MPG. Choosing the 45 MPG car could save you hundreds of dollars in fuel costs each year.

*Assumes a fuel cost of $1.50 per gallon and 15,000 miles per year.

Who's Driving around Roanoke County?

Next to your home, the largest energy consumer you own is *your car*!

Did you know...

- Between 1970 and 1999, U.S. population grew by 33%. **Vehicle miles driven increased 143%**
- Nationwide, vehicle emissions account for 29% of all air pollution emissions:
  - 29% of the volatile organic compounds (combines with sunlight and nitrogen oxide to form smog)
  - 34% of the nitrogen oxides (major cause of acid rain)
  - 51% of carbon monoxide

County Facts & Figures

Employees Commuting:

- County employees commuting to work drive over 4,583,000 miles per year.
- Use over 208,320 gallons of fuel (@ 22 mpg) at a cost of more than $376 per employee!
- Adding in the expenses of vehicle depreciation, insurance, fees, oil, tires and repairs, the average County employee is paying over ***$2460*** just to drive to work!

Give yourself a raise! Carpool!

County Vehicles:

- Average 11.7 mpg.
- Are driven 4,946,000 miles annually.
- Use over 390,000 gallons of fuel a year.

Overall Impact to Environment:

- Including reimbursable miles—this is well over 9,000,000 miles per year.
- County driving related activities contribute over **8500 tons** of air pollution every year!

Drive More Efficiently

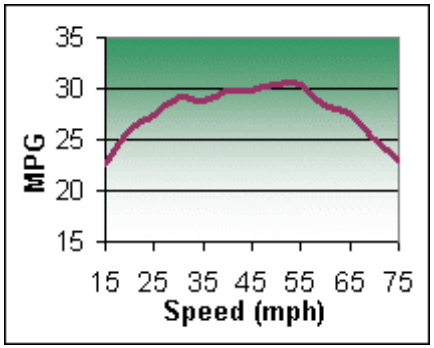
Drive Sensibly. Aggressive driving (speeding, rapid acceleration and braking) wastes gas.

Avoid "jackrabbit" starts by accelerating gradually whenever possible. Anticipate stops to avoid sudden braking.

Avoid Long Idles. Turn off the engine if you anticipate a wait over 30 seconds. Instead of using the drive-up window, park the car and go in. Idling for just 10 seconds burns more gas than restarting the engine. Limit car warm-ups to no more than 30 seconds in winter.

Stop & Go Driving. Plan trips outside of rush hour and peak traffic periods. Accelerate and decelerate gradually.

Observe the Speed Limit. Gas mileage decreases rapidly at speeds above 60 mph. Each 5 mph you drive over 60 mph is like paying an additional $0.10 per gallon for gas.



Use Overdrive. If your car is equipped with overdrive (on 5-speed manual transmissions and 4-speed automatic transmissions), use the overdrive gear as soon as your speed is high enough. If you have a manual transmission, the lower the shift speed, the better the fuel economy.

Avoid Air Conditioning. Using the a/c increases the load on the engine and reduces mileage by up to 2 MPG. Whenever possible, park in the shade and use your fresh air vent when driving.

Fuel Economy Benefit. Sensible driving can improve gas mileage by 33% at highway speeds and by 5% around town. Sensible driving is also safer for you and others, so you may save more than just gas money.

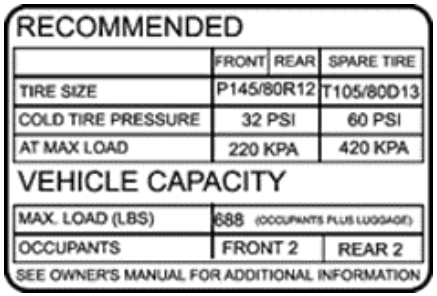
Maintain Your Vehicle

Maintaining your car will reduce emissions and enhance performance - extending your car's life, increasing resale value and optimizing fuel economy.

Keep Your Engine Properly Tuned. Fixing a car that is noticeably out of tune or has failed an emissions test can improve its gas mileage by an average of 4%, though results vary based on the kind of repair and how well it is done. If your car has a faulty oxygen sensor, your gas mileage may improve *as much as 40%* once it is replaced.

Check & Replace Air Filters Regularly. Replacing a clogged air filter can improve your car's gas mileage by as much as 10%. Your car's air filter keeps impurities from damaging the inside of your engine. Not only will replacing a dirty air filter save gas, it will protect your engine.

Keep Tires Properly Inflated. You can improve your gas mileage by around 3.3% by keeping your tires inflated to the proper pressure. Under-inflated tires can lower gas mileage by 0.4% for every 1 psi drop in pressure of all four tires. Properly inflated tires are safer and last longer.



RECOMMENDED

	FRONT	REAR	SPARE TIRE
TIRE SIZE	P145/80R12		T105/80D13
COLD TIRE PRESSURE	32 PSI		60 PSI
AT MAX LOAD	220 KPA		420 KPA

VEHICLE CAPACITY

MAX. LOAD (LBS)	688 (OCCUPANTS PLUS LUGGAGE)	
OCCUPANTS	FRONT 2	REAR 2

SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION

What Does This Mean?

County personnel are requested to:

- Turn off all incandescent and Halogen lights when not in use.
- Turn off all fluorescent fixtures if you will be out of your work area for more than 15 minutes.
- Help us conserve energy - dress for the weather.
- Avoid constantly adjusting a thermostat - call Building Maintenance if you have temperature concerns.
- Keep furniture, plants, etc. away from wall grills and fan units. They block air flow and reduce the capacity of the HVAC system.
- Set the Energy Star features on your computer to power down after 15 minutes.
- Turn computers off when not in use or when you will be away from the office for more than 1 hour.
- Avoid printing any unnecessary documents or emails. Avoid printing unnecessary pages, such as fax cover sheets.
- Make duplex instead of single-sided copies whenever possible and re-use old single sided documents for printing drafts.
- Recycle office paper.
- Be good environmental stewards.

Energy Saving Tips for You

It starts at home:

- Is your home leaking energy? The average house has enough leaks around the windows and doors to equal one open 3 x 3 window. Find and plug those leaks. Install storm windows or double pane windows.
- Your HVAC system consumes more than half the energy in your home. Installing a programmable thermostat will save you money by only heating/cooling the house when someone is home.
- For each degree you lower your thermostat in the winter, you can save about 3% on your heating bill.
- 10 – 13% of the average home's electricity costs can be controlled with the flip of a switch – light switch that is. Compact fluorescent light bulbs save money and energy, typically resulting in a 300-400% reduction over incandescent lights.
- New Energy Star appliances (including hot water heaters) can reduce energy costs by more than 25%.
- Check out the following web sites for additional ways to ***give yourself a Raise!***

www.ase.org
http://doityourself.com/energy/
www.eere.energy.gov/consumerinfo/energy_savers/

You can make a difference!

A group of your co-workers, the Environmental Assessment Team, has reviewed Roanoke County operations to determine which activities may have a potentially significant impact on the environment. At the top of the list is energy usage. Why?

- *Reducing overall energy usage reduces the demand on coal-fired power plants that add to air pollution;*
- *The Roanoke Valley has exceeded federal clean air standards for ozone, the primary component of smog;*
- *The County is committed to protecting and improving the environment of the Roanoke Valley; and*
- *Saving energy saves money - it just makes good sense.*

County Facts & Figures

Computers:

- Roanoke County has 943 computers that use 226,320 kWh/year of electricity when operating 8 hours/day 5 days/week. This use produces over 164 tons of CO_2 year
- Using Energy Star 'sleep' features and remember to shut down computers whenever possible. This can save the County over $7,400/year and reduce emissions in the process.

Lighting:

- Accounts for 25% to 50% of the electricity used in most commercial buildings. Turning off lights when not in use is the easiest and most cost-effective way to save energy.
- Converting to compact fluorescent lights (CFL's) which are more efficient than standard incandescent and halogen light bulbs.

Heating & Cooling:

- Fans and ventilation systems consume a lot of energy, especially in larger buildings.
- Minimize energy loads so that HVAC equipment can be downsized and don't locate copiers, fax machines, etc. near thermostats.
- Window blinds can be very beneficial by keeping out direct sunlight and lowering office space temperatures during the summer.

Environmental Impact

Roanoke County is using ISO 14001 standards to guide the development of an environmental management program.

ISO 14001 requires an organization to have an environmental management system (EMS) in place. The EMS provides a framework to identify and address the significant environmental impacts of all activities, products and services.

In addition, ISO 14001 requires an organization to comply with all relevant environmental legislation and commit to continual improvement.

The County's commitment to environmental stewardship applies to **all** employees since everyone takes part in daily activities that may positively or negatively affect the environment.

Roanoke County's System of Environmental Management will:

- Identify, evaluate, and manage the potential environmental impacts of the County's activities and services;
- Bring environmental issues and solutions to the attention of County government;
- Conform to requirements of applicable environmental laws and regulations;
- Employ pollution prevention to eliminate or reduce adverse environmental impacts; and
- Encourage other organizations to establish and implement systems of environmental management.

Corrective Actions

Operational Controls:

Operational Controls are planned activities and procedures with measurable results that will directly affect environmental goals and improve or reduce the impact on significant environmental aspects

Currently, three operational controls are planned. Two address energy usage.

- The first control targets energy consumption by upgrading lighting, heating and cooling controls to reduce usage.
- The second control recommends setting Energy Star features to power down computers after 15 minutes when they are not in use.

  Both of these controls also encourage responsible workplace behaviors such as turning off light fixtures and electronic equipment when not in use.
- The third control addresses solid waste management, especially paper use. County administrative offices currently use over 32 tons of paper per year at a cost of more than $30,000. The goal of this operational control is to reduce paper usage by 25% by encouraging departments to go "paperless" wherever possible.

Botetourt County, Virginia
Office of the County Administrator

1 West Main Street, No. 1
Fincastle, Virginia 24090
Phone (540) 473-8223
Fax (540) 473-8225

Board of Supervisors
S.P. Clinton
Chairman
T.L. Austin
Vice Chairman
D.A. Assaid
D.L. Meredith
Wanda C. Wingo

The regular meeting of the Botetourt County Board of Supervisors was held on Tuesday, February 24, 2004, in the County Board Meeting Room, Old General District Courthouse, Fincastle, Virginia, beginning at 9:00 A. M.

PRESENT: Members: Mr. Stephen P. Clinton, Chairman
Mr. Terry L. Austin, Vice-Chairman
Mrs. Wanda C. Wingo
Mr. Don L. Meredith
Mr. Don A. Assaid

ABSENT: Members: None

After discussion, on motion by Mrs. Wingo, and carried by the following recorded vote, the Board, approved the following resolution to endorse and adopt the Ozone Early Action Plan for the Roanoke Valley Area.

AYES: Mr. Assaid, Mr. Clinton, Mrs. Wingo, Mr. Austin, Mr. Meredith
NAYS: None
ABSENT: None ABSTAINING: None

Resolution Number 04-02-11

Whereas, clean air is essential for quality of life, economic development and general public well-being of the Roanoke Valley Area; and,

Whereas, the United States Environmental Protection Agency (EPA) established a revised 8-hour ozone standard in 1997 that was set a 0.085 parts per million (ppm), averaged over a three-year period; and,

Whereas, the ozone monitoring station in the Roanoke area (in the Town of Vinton) currently has a design value of 0.085 ppm that would qualify the area for the designation of nonattainment area for ozone under the Clean Air Act (CAA) of 1990; and,

Whereas, the EPA has developed and endorsed the air quality planning concept of Early Action Compacts, where an area that marginally exceeds the ozone standard can enter into a voluntary agreement with state and federal governments to develop and implement an Early Action Plan to proactively reduce ozone levels and come into compliance with the standard; and,

Whereas, elected officials, representing the Cities of Roanoke and Salem, the Counties of Botetourt and Roanoke and the Town of Vinton, acting through the Roanoke Valley Area Metropolitan Planning Organization (MPO) entered into an Ozone Early Action Compact with the Virginia

Department of Environmental Quality (VDEQ) and the Federal Environmental Protection Agency (EPA) in December 2002; and,

Whereas, the Ozone Early Action Compact authorized the establishment of an Early Action Plan Task Force and the development of a regional Early Action Plan consisting of local, state and national strategies to bring the Roanoke Valley Area into attainment with the 8-hour Ozone standard by 2007; and,

Whereas, in response, the Early Action Plan Task Force has developed and submitted a Early Action Plan for consideration and adoption by the localities that have entered into the Early Action Compact; and,

Whereas, the Early Action Plan contains specific commitments and responsibilities to be undertaken by the localities that have entered into the Early Action Compact; and,

Whereas, technical analyses conducted by VDEQ and EPA indicate that air quality is expected to improve in the Roanoke Valley area by 2007; and,

Whereas, the Botetourt County Board of Supervisors is fully committed to fulfill these specific commitments and responsibilities under the Ozone Early Action Plan; and,

Whereas, furthermore, the Botetourt County Board of Supervisors is fully committed to the regional cooperation and coordination necessary to bring the area into attainment, as measured by the regional Ozone monitor, for the 8-hour Ozone standard in 2007.

Therefore be it resolved, that on the 24th day of February 2004, the Botetourt County Board of Supervisors officially approves and endorses the regional Ozone Early Action Plan (EAP), and is committed to its implementation and success.

Be it further resolved, that a signed copy of this resolution of commitment from Botetourt County will be sent to the Director of the Virginia Department of Environmental Quality for processing and inclusion into the official State Implementation Plan, which once approved by EPA will make these commitments and responsibilities federally enforceable.

A Copy TESTE:

Mr. Gerald A. Burgess
County Administrator

TOWN OF VINTON

311 So. Pollard Street
VINTON, VIRGINIA 24179-2531
PHONE (540) 983-0607
FAX (540) 983-0621

Carolyn S. Ross
Admin. Asst./Town Clerk

January 22, 2004

Wayne G. Strickland
Secretary to the Commission
Roanoke Valley-Alleghany Regional Commission
P. O. Box 2569
Roanoke, Virginia 24010

Re: Roanoke Valley Ozone Early Action Plan

Dear Mr. Strickland:

Please find enclosed a copy of Resolution No. 1506, adopted by Vinton Town Council on Tuesday, January 20, 2004, endorsing and adopting the Ozone Early Action Plan for the Roanoke Valley area. I understand that you will be forwarding the Town's commitment, along with commitments from the other Valley jurisdictions, to the Virginia Department of Environmental Quality for processing and inclusion into the official State Implementation Plan.

If we can be of further assistance, please do not hesitate to contact me.

Sincerely,

Carolyn S. Ross

Carolyn S. Ross
Admin. Asst./Town Clerk

csr

Enclosure

RESOLUTION NO. 1506

AT A REGULAR MEETING OF THE VINTON TOWN COUNCIL HELD ON TUESDAY, JANUARY 20, 2004, AT 7:00 PM, IN THE COUNCIL CHAMBERS OF THE VINTON MUNICIPAL BUILDING, 311 SOUTH POLLARD STREET, VINTON, VIRGINIA

A RESOLUTION ENDORSING AND ADOPTING THE OZONE EARLY ACTION PLAN FOR THE ROANOKE VALLEY AREA

Whereas, clean air is essential for quality of life, economic development and general public well-being of the Roanoke Valley Area; and,

Whereas, the United States Environmental Protection Agency (EPA) established a revised 8-hour ozone standard in 1997 that was set a 0.085 parts per million (ppm), averaged over a three-year period; and,

Whereas, the ozone monitoring station in the Roanoke area (in the Town of Vinton) currently has a design value of 0.085 ppm that would qualify the area for the designation of nonattainment area for ozone under the Clean Air Act (CAA) of 1990; and,

Whereas, the EPA has developed and endorsed the air quality planning concept of Early Action Compacts, where an area that marginally exceeds the ozone standard can enter into a voluntary agreement with state and federal governments to develop and implement an Early Action Plan to proactively reduce ozone levels and come into compliance with the standard; and,

Whereas, elected officials, representing the Cities of Roanoke and Salem, the Counties of Botetourt and Roanoke and the Town of Vinton, acting through the Roanoke Valley Area Metropolitan Planning Organization (MPO) entered into an Ozone Early Action Compact with the Virginia Department of Environmental Quality (VDEQ) and the Federal Environmental Protection Agency (EPA) in December 2002; and,

Whereas, the Ozone Early Action Compact authorized the establishment of an Early Action Plan Task Force and the development of a regional Early Action Plan consisting of local, state and national strategies to bring the Roanoke Valley Area into attainment with the 8-hour Ozone standard by 2007; and,

Whereas, in response, the Early Action Plan Task Force has developed and submitted a Early Action Plan for consideration and adoption by the localities that have entered into the Early Action Compact; and,

Whereas, the Early Action Plan contains specific commitments and responsibilities to be undertaken by the localities that have entered into the Early Action Compact; and,

Whereas, technical analyses conducted by VDEQ and EPA indicate that air quality is expected to improve in the Roanoke Valley area by 2007; and,

Whereas, the Town of Vinton is fully committed to fulfill these specific commitments and responsibilities under the Ozone Early Action Plan; and,

Whereas, furthermore, the Town of Vinton is fully committed to the regional cooperation and coordination necessary to bring the area into attainment, as measured by the regional Ozone monitor, for the 8-hour Ozone standard in 2007.

Therefore be it resolved, that on ***this 20th day of January of 2004*** the Town Council of the Town of Vinton officially approves and endorses the regional Ozone Early Action Plan (EAP), and is committed to its implementation and success.

Be it further resolved, that a signed copy of this resolution of commitment from the Town of Vinton will be sent to the Director of the Virginia Department of Environmental Quality for processing and inclusion into the official State Implementation Plan, which once approved by EPA will make these commitments and responsibilities federally enforceable.

Adopted on motion made by Councilman Grose, seconded by Councilman Rotenberry, with the following votes recorded:

AYES: Altice, Grose, Obenchain, Rotenberry, Mayor Davis

NAYS: None

APPROVED:

Donald L. Davis

Donald L. Davis, Mayor

ATTEST:

Carolyn S. Ross

Carolyn S. Ross, Town Clerk

TOWN OF VINTON

804 THIRD STREET
VINTON, VIRGINIA 24179

PHONE (540) 983-0646
FAX (540) 985-4582

C. Curtis Shumate
Public Works Director

January 15, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, VA 23219

Dear Director Burnley,

The Roanoke Valley region faces complex challenge regarding our air quality. Not only is the region scheduled to be classified as a non-attainment area under the eight-hour ozone standard, but our poor air quality also threatens the health of everyone living and working in this region. In addition to causing increased respiratory and other public health problems for our citizens, failure to address our air quality problems could result in the imposition of sanctions that would jeopardize the expansion of our region's highway and mass transit systems and adversely affect the economic well being our region.

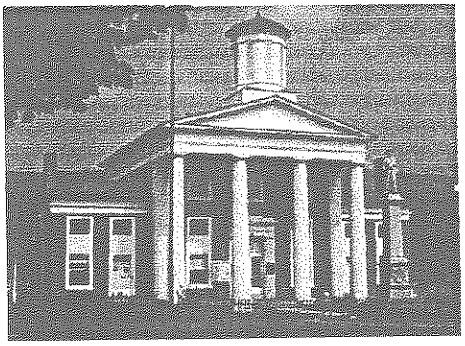
For these reasons, the elected leadership of the Roanoke Valley Area Metropolitan Planning Organization (MPO) entered into an Ozone Early Action Compact (EAC) with the Virginia Department of Environmental Quality (VDEQ) and the Federal Environmental Protection Agency (EPA). The MPO is developing and Ozone Early Action Plan (EAP) which includes proposals to improve air quality. These proposals require action by the Town of Vinton, not only in the role of a Town government responsible for implanting public programs to reduce air pollution, but also s a large corporate entity whose actions will impact regional air quality. The Town of Vinton takes these responsibilities very seriously. We believe that meeting the federal air quality standard for ozone is a high priority. Though we are acting in conjunction with the regional efforts being undertaken by the Metropolitan Planning Organization, we must also lead the way for others to follow.

As a result, I am pleased to inform you that the Town of Vinton hereby commits to prohibiting refueling of all non-emergency vehicles on days which are predicted to be no attainment for the Ozone 8-Hour Standard beginning in January 2004. The Town of Vinton commits to provide an annual accounting of the days on which refueling was prohibited, and the number, location and average throughput of affected fuel pumps. This data will enable validation if credit is taken for this voluntary measure in the State Implementation Plan (SIP). Details of the Town of Vinton's commitment are provided in Attachment 1.

If you have any questions or require additional information regarding this commitment, please contact Curtis Shumate at (540) 983-0646.

Sincerely,

Curtis Shumate
Public Works Director



P.O. Box 308
New Castle, Virginia 24127
540-864-5010 Phone
540-864-5590 Fax

February 7, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Dear Director Burnley,

I am writing you to express that Craig County, Virginia wholeheartedly supports the air quality early action planning efforts of our neighboring localities in the Roanoke Valley. Although we are not slated to be air quality nonattainment for Ozone and we are not officially a part of the Early Action Plan (EAP) scope, we would like to support proactively improving regional air quality by taking on voluntary measures in support of our neighbor's efforts.

The voluntary measures that we currently plan to implement before 2007 are:

- Refueling local fleets before 8:00 am or after 4:30 pm on days predicted to be Ozone nonattainment for the Roanoke Valley (8-hour Ozone standard)
- Open burning – no permits will be issued on days forecast to be air quality nonattainment and / or limited permits during the ozone season.

We are excited that our neighboring localities have an opportunity to show that local and regional choice can be an effective way to fulfill our air quality goals. We intend to do all we can to help make our neighbor's Ozone Early Action Plan a success so we can all enjoy improved air quality.

Sincerely,

Larry V. Moore, Sr.
County Administrator

Cc: Wayne Strickland, RVARC

40 East Court Street
Rocky Mount, Virginia 24151
540-483-3030 (Voice)
540-483-3035 (Fax)

County of Franklin
Board of Supervisors

Richard E. Huff, II
County Administrator
countyadmin@franklincountyva.org

January 22, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Dear Director Burnley:

I am writing to express that Franklin County wholeheartedly supports the air quality early action planning efforts of our neighboring localities in the Roanoke Valley. Although we are not slated to be air quality nonattainment for Ozone and we are not officially a part of the Early Action Plan (EAP) scope, we would like to enthusiastically support proactively improving regional air quality in support of our neighbor's efforts.

We are excited that our neighboring localities have an opportunity to show that local and regional choice can be an effective way to fulfill our air quality goals. We intend to do all we can to help make our neighbor's Ozone Early Action Plan a success so we can all enjoy improved air quality.

Sincerely,

Richard E. Huff, II
County Administrator

ROANOKE
REGIONAL
CHAMBER OF
COMMERCE

January 22, 2004

Mr. Robert Burnley
Director
Virginia Department of Environmental Quality
629 Each Main Street
Richmond, VA 23219

Dear Director Burnley:

The Board of Directors of the Roanoke Regional Chamber of Commerce understands the need to plan for long-term regional stability and prosperity. A key ingredient in present and future economic prosperity is improving regional air quality. Many issues related to economic growth such as maintaining the area as a desirable center for tourism or reducing the high cost of health care directly depend on improving air quality.

With this in mind, we were encouraged to learn that local governments in the region are cooperatively acting to improve air quality through the Roanoke Valley Area Metropolitan Planning Organization (MPO) by recently entering into an Ozone Early Action Compact (EAC) with the Virginia Department of Environmental Quality (VDEQ) and the Federal Environmental Protection Agency (EPA). The Roanoke Regional Chamber of Commerce would like to support this effort by encouraging the business community to pursue voluntary actions that will help reduce pollutants, which form ground level ozone. The specific voluntary actions encouraged will vary by type of business and circumstances; however, we are committed to assisting in the goal of reducing ground level ozone levels by 2007.

We sincerely believe that cooperation between the public and private sectors is the best way to achieve results in improved air quality. Our contribution to better air quality will not only continue the Roanoke Regional Chamber of Commerce's tradition of good business and civic leadership, it will improve the business and economic development climate in which we operate. We look forward to being a part of the solution.

Sincerely,

John B. Williamson, III
Chairman
Roanoke Regional Chamber of Commerce

Beth Doughty
President
Roanoke Regional Chamber of Commerce

Salem-Roanoke County
Chamber Of Commerce
Linking Business to the Community

February 26, 2004

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, VA 23219

Dear Director Burnley:

The Board of Directors of the Salem-Roanoke County Chamber of Commerce understands the need to plan for long-term regional stability and prosperity. A key ingredient in present and future economic prosperity is improving regional air quality. Many issues related to economic growth, such as maintaining the area as a desirable center for tourism or reducing the high cost of health care, directly depend on improving air quality.

With this in mind, we were encouraged to learn that local governments in the region are cooperatively acting to improve air quality through the Roanoke Valley Area Metropolitan Planning Organization (MPO) by recently entering into an Ozone Early Action Compact (EAC) with the Virginia Department of Environmental Quality (VDEQ) and the Federal Environmental Protection Agency (EPA). The Salem-Roanoke County Chamber of Commerce would like to support this effort by encouraging the business community to pursue voluntary actions that will help reduce pollutants, which form ground level Ozone. The specific voluntary actions encouraged will vary by type of business and circumstances; however, we are committed to assisting in the goal of reducing ground level ozone levels by 2007.

We sincerely believe that cooperation between the public and private sectors is best way to achieve results in improved air quality. Our contribution to better air quality will not only continue the Salem-Roanoke County Chamber of Commerce's tradition of good business and civic leadership, it will improve the business and economic development climate in which we operate. We look forward to being a part of the solution.

Sincerely,

Joe Cundiff
President, Salem-Roanoke County Chamber of Commerce

Cc. Mayor Don Davis, Chairman, Roanoke Valley Area
Metropolitan Planning Organization

Vinton Area
Chamber of Commerce

P O Box 83
Vinton, VA 24179-0083

(540) 343-1364
VintonChamber1@aol.com

January 19, 2004

Mr. Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, VA 23219

Dear Director Burnley,

The Board of Directors of the Vinton Area Chamber of Commerce understands the need to plan for long-term regional stability and prosperity. A key ingredient in present and future economic prosperity is improving regional air quality. Many issues related to economic growth such as maintaining the area as a desirable center for tourism or reducing the high cost of health care directly depend on improving air quality.

With this in mind, we were encouraged to learn that local governments in the region are cooperatively acting to improve air quality through the Roanoke Valley Area Metropolitan Planning Organization by recently entering into an Ozone Early Action Compact with the Virginia Department of Environmental Quality and the Federal Environmental Protection Agency. The Vinton Area Chamber of Commerce would like to support this effort by encouraging the business community to pursue voluntary actions that will help reduce pollutants, which form ground level Ozone. The specific voluntary actions encouraged will vary by type of business and circumstances, however, we are committed to assisting in the goal of reducing ground level ozone levels by 2007.

We sincerely believe that cooperation between the public and private sectors is best way to achieve results in improved air quality. Our contribution to better air quality will not only continue the Vinton Chamber of Commerce's tradition of good business and civic leadership, it will improve the business and economic development climate in which we operate. We look forward to being a part of the solution.

Sincerely,

Anthony W. Conner
President

Cc: Mayor Don Davis, Chairman, Roanoke Valley Area

Post-it® Fax Note 7671	Date 2-4-04	# of pages ▸ 1
To WAYNE	From DON DAVIS	
Co./Dept.	Co.	
Phone # PYI	Phone #	
Fax #	Fax #	

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219-2000

PHILIP A. SHUCET
COMMISSIONER

JEFFREY C. SOUTHARD
CHIEF
TRANSPORTATION PLANNING
AND ENVIRONMENTAL AFFAIRS

January 9, 2004

Mr. Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Re: Roanoke, Virginia Early Action Plan

Dear Mr. Burnley:

The Virginia Department of Transportation understands that the Roanoke Region is not meeting the eight-hour ozone standard and we applaud the proactive efforts of the Virginia Department of Environmental Quality and the Roanoke Early Action Taskforce to improve the region's air quality faster through the Early Action Compact process.

To support this effort, VDOT is pleased to inform you that we will hereby commit to following:

- Fully implementing our Automated Fuels Management Program (AFMP) in the Roanoke Region by July 2004. The scheduled maintenance program associated with the AFMP minimizes air emissions from vehicles that refuel at our refueling facilities located in the Roanoke region. VDOT plans to automate all of the re-fueling facilities in Virginia including the 10 facilities located in the Roanoke Early Action Compact Area. A list of these facilities in the Roanoke Region is attached.

- Implementing an Episodic Ozone Program in the Roanoke Early Action Compact area. VDOT first implemented this program in Roanoke during the 2003 ozone season and we are committed to continuing this program which includes the following:
  - Encouraging telecommuting and ridesharing
  - Displaying ozone alerts on variable messages signs throughout the Roanoke region to alerts the region of potential 8-hour ozone standard exceedences
  - Restricting mowing in the Early Action Compact Area
  - Restricting fueling at VDOT gasoline facilities for non-emergency vehicles and encouraging re-fueling prior to predicted ozone exceedence days
  - Postponing use of oil based paints and solvents

Attached is a copy of our 2003 directive memorandum regarding our Episodic Ozone Program.

If you have any questions or require additional information regarding our commitment to improve the air quality in the Roanoke Region, please contact Amy Costello at 804-371-6773.

Sincerely,

Jeffrey C. Southard

Attachment

cc: Ms. Amy Costello

Table 1. Location of Automated Fuels Management Program Sites in the Roanoke Region

Fueling Station Name	Fueling Station Location
Salem Residency 311 Shop*	Roanoke County
Airport Area Headquarters*	Roanoke County
Salem Residency Lot*	Roanoke County
Salem District Shop*	Roanoke County
Troutville Shop*	Botetourt County
Eagle Rock*	Botetourt County
Buchanan*	Botetourt County
New Castle	Botetourt County
Burnt Chimney*	Vinton
Troutville*	Vinton

* Automated Fuel Management System installation complete

Table 2: Variable Message Signs in the Roanoke Early Action Plan Area

Site No.	County	Route	VMS Location	Street Name
1127	Botetourt	220 (NB)	0.01 Mi. S. of Rte. 1028 Autumnwood Ln. (Exit 150)	Cloverdale Rd.
1128	Botetourt	220	0.15 Mi. N. of Rte. 794 (in median) (Exit 150)	Roanoke Rd.
1129	Botetourt	640 (EB)	0.05 Mi. E. of Rte. 798 (at northbound on ramp) (Exit 156)	Brugus Mill Rd.
1130	Botetourt	I-81 (SB)	M.P. 152 (Troutville)	*******
1136	Botetourt	460 (WB)	0.35 Mi. W. of Rte. 660	Blue Ridge Blvd.
8001	Roanoke	I-81 (SB)	M.P. 134.39	**********
8017	Roanoke	647 (SB)	0.05 Mi. S. of Rte. 778 (Exit 132)	Doiv Hollow Rd.
8018	Roanoke	11 (NB)	0.53 Mi. N. of Rte. 639 (Exit 132)	West Main St.
8019	Roanoke	11 (SB)	0.79 Mi. S. of Rte. 927 (Exit 132)	West Main St.
8021	Roanoke	311 (SB)	0.10 Mi. S. of Rte. 1128 (Exit 140)	Thompson Memorial Dr.
8022	Roanoke	419 (SB)	0.11 Mi. S. of Rte. 863 (Exit 141)	N. Electric Rd.
8023	Roanoke	419 (NB)	0.26 Mi. N. of Locke Rd. (Exit 141)	N. Electric Rd.
8024	Roanoke	581 (NB)	0.50 Mi. N. of Exit 3 (Hershberger Rd)	*******
8026	Roanoke	115 (NB)	0.19 Mi. N. of Rte. 1895 (Exit 146)	Plantation Rd.
8037	Roanoke	460 (EB)	0.04 Mi. E. of Rte. 757	Challenger Ave.
8038	Roanoke	220 (NB)	0.29 Mi. N. of Rte. 930	Franklin Rd.
8039	Roanoke	220 Expwy	0.25 Mi. N. of Rte. 220 (Bus/Franklin Rd. Exit)	Roy L. Webber Hwy.
8034	Roanoke City	I-581 (SB)	M.P. 2.19	
8020	Salem	112 (NB)	0.01 Mi. N. of Kiska Rd. (Exit 137)	Wildwood Rd.
8035	Salem	311 (NB)	0.03 Mi. S. of NB on ramp (Exit 140)	Thompson Memorial Dr.

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219-2000

PHILIP A. SHUCET
COMMISSIONER

April 14, 2003

MEMORANDUM

TO: All District Administrators

FROM: Philip Shucet

SUBJECT: Ozone Alert Procedures

The 2003 ozone season begins **May 1.** As part of either an air quality nonattainment or maintenance area, will you please assure that your District implements the below measures to reduce air pollution emissions. These measures are to be implemented on "code red action days". The Virginia Department of Environmental Quality (VDEQ) designates a "code red action day" when ozone is predicted to be at high and unhealthy levels.

VDOT Actions on Code Red Days:

1. *Reduce Travel* – Minimize travel to the extent possible, use transit, participate in ridesharing and encourage teleconferencing.
2. *Postpone Mowing* -- Postpone the use of gasoline and diesel powered mowers, weed eaters and other similar gasoline engines.
3. *Restrict Fueling* – Gasoline facilities will be locked from 8:30 a.m. to 5:00 p.m.
4. *Variable Message Signs* – If variable message signs are not needed for emergency purposes, then they should alert the public of the "code red ozone day". The following verbiage is suggested: "Ozone Advisory: Reduce travel, carpool, refuel after 5 pm".
5. *Reduce Electricity Usage* – Dim or turn off unnecessary lights, turn off supplemental appliances and maintain air conditioning at reasonable temperatures at VDOT facilities (74° or above).
6. *Postpone Painting* – Postpone use of oil based paints and solvents.
7. *Safety Measures* – Limit prolonged outdoor exertion.

Our Emergency Operations Center will notify you by e-mail of pending "code red" ozone days. This notice will be provided the day before the VDEQ predicts a "code red" ozone day. Please Forward this memorandum to your staff and encourage them to take these precautionary actions. Because of new regulations, counties in our Salem and Staunton District have been added to our list of nonattainment and maintenance areas. If you or your staff has any question regarding the above measures, please contact either Amy Costello at 804-371-6773.

Virginia Ozone
Nonattainment and Maintenance Areas

Ozone Nonattainment Area: An area that exceeds the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for ozone.

Ozone Maintenance Area: An area that previously exceeded the EPA's NAAQS for ozone that must continue to implement procedures to assure continued air quality improvements.

Table 1. Jurisdictions by VDOT Districts that are located either in ozone nonattainment or maintenance areas.

	DISTRICT						
	Northern Virginia	**Fredericksburg**	**Culpeper**	**Staunton**	**Hampton Roads**	**Richmond**	**Salem**
JURISDICTION	Alexandria Arlington Fairfax (County & City) Falls Church Loudoun Manassas Manassas Park Prince William	Caroline* Fredericksburg* Spotsylvania* Stafford	Fauquier*	Frederick* Winchester*	Chesapeake Hampton James City Newport News Norfolk Poquoson Portsmouth Suffolk Virginia Beach Williamsburg York	Charles City (partial)[1] Chesterfield Colonial Heights Hanover Henrico Hopewell Richmond	Boletourt* Roanoke (County & City)* Salem* Vinton*

* New nonattainment areas under the 8-hour standard

[1] Beginning at the intersection of State Route 156 and the Henrico/Charles City County line, proceeding south along State Route 5/156 to the intersection with State Route 106/156, proceeding south along 106/156 to the intersection with Prince George/Charles City County line, proceeding west along the Prince George/Charles City County line to the intersection with the Chesterfield/Charles City County line, proceeding north along the Chesterfield/Charles City County line to the intersection with the Henrico/Charles City County line, proceeding north along the Henrico/Charles City County line to State Route 156.

Linking the Communities of Roanoke, Salem, Blacksburg, and Christiansburg

Service Proposal - Executive Summary
October 30, 2003

Background

In July 2002, the Fifth Planning District Regional Alliance, which is an organization formed in 1997 to promote economic competitiveness in this region, released the Regional Economic Strategy report. One of the needs identified in the report was the need to connect the communities of Roanoke, Salem, Blacksburg, and Christiansburg. The report states "Geographic isolation increases costs of doing business in a Global Economy. Lack of connections between activity centers within the region makes it difficult to create a sense of region and critical mass." Therefore, one of the goals identified in the report is to improve the availability and reduce the cost of intra-regional and inter-regional connectivity. One of the tactics identified to accomplish this goal is to create a regional public transportation system that links urban centers, airport, commuters, and knowledge assets conveniently and affordably.

Additionally, recent commuter data compiled by the Roanoke Valley Alleghany Regional Commission identifies 1,691 workers who commute daily between Montgomery County (Blacksburg/Christiansburg) and the City of Roanoke. The use of regional public transportation by these commuters would benefit the region in numerous ways. Three of which are:

- Maintain and assist in improvement of regional air quality
- Reduce traffic congestion on I-81
- Increased employment opportunities for the transit dependent

Service Implementation

Valley Metro proposes to initiate service between the City of Roanoke and the Town of Blacksburg in the spring of 2004. The service is anticipated to operate on an hour and a half schedule everyday with the buses serving Roanoke's Higher Education Center, the Hotel Roanoke, Roanoke Regional Airport, VDOT Park and Ride lots at exit 140 and exit 118 on I-81, Christiansburg, and the Squires Student Center on the Virginia Tech campus. The proposed schedule is attached.

Ridership

The fare is proposed to be $3.00 per one-way trip. The estimated ridership for FY04(Apr-Jun) is 128 one-way trips per day, 142 one-way trips per day in FY05. Valley Metro further estimates that the FY06 ridership will reach 218 one-way trips per day. The table below details the estimated annual ridership and farebox revenues for each of the first two plus years of operation.

Fiscal Year	Estimated Ridership (one-way trips)	Estimated Farebox Revenue
FY 2004 (Apr-Jun)	9,918	$29,754
FY 2004-2005	43,416	$130,248
FY 2005-2006	66,891	$200,672

Operating Budget

Valley Metro has received approval for a State of Virginia Demonstration Grant to initiate this service. The following table contains the operating budget for the service and the funding sources.

	FY 2004 (Apr-Jun)	FY 2004-2005	FY 2005-2006
Total Estimated Expenses	**$73,190**	**$251,515**	**$267,332**

Revenues:			
Passenger Fares	$29,754	$130,248	$200,672
Federal Funds	$0	$30,259	$33,330
VA. Demo Grant	$41,264	$57,713	$0
VA. State Inter-City Funds	$0	$12,104	$13,332
Local Funds	$2,172	$21,191	$19,998
Total Estimated Revenues	**$73,190**	**$251,515**	**$267,332**

As the table above demonstrates, year one is funded through farebox revenue, the Virginia demonstration grant and local funding provided by the City of Roanoke. Future years will be funded with Federal and State Inter-City funds, which take the place of the Virginia demonstration grant. ***The City of Roanoke will provide all local matching funds required for this service through FY06.*** The decision to continue service in FY07 and beyond, and the level of funding needed from each locality, will be determined prior to that time.

Valley Metro plans to monitor the progress of the service provided. To do this, a key factor will be the recovery ratios of cost per passenger and farebox recovery. Utilizing the budget data provided above, the target ratios will be:

	FY 2004 (Apr-Jun)	FY 2004-2005	Change	FY 2005-2006	Change
Cost per Passenger	$7.38	$5.79	$1.59 ↓	$4.00	$1.79 ↓
Farebox Recovery	41%	52%	↑ 22%	75%	↑ 31%

As the service develops, Valley Metro will offer monthly passes, which will entitle the passholder to an unlimited number of rides during that month. When this happens, the recovery ratio of average fare paid will be monitored.

Capital Budget

Valley Metro has secured funding in the amount of $350,000 to purchase buses for the proposed service. These wheelchair accessible vehicles will be designed for highway use and contain high back reclining seats and luggage storage. Valley Metro plans to purchase three to four of these vehicles, depending on the cost. In addition, Valley Metro will include the life cycle replacement for these vehicles in their existing Capital Replacement Program.

The funding for these units is 80% federal ($280,000) and 20% City of Roanoke ($70,000).

Monitoring Ridership

Valley Metro plans to monitor the ridership to determine the needs and demographics in an effort to enhance the service offered. This will be accomplished through the use of periodic ridership surveys. Special attention will be paid to the residency of the ridership and any relation to Virginia Tech (student, staff, and employee).

Roanoke Regional Airport

As an enhancement to the originally proposed service, Valley Metro has modified the service schedule to provide service to the Roanoke Regional Airport. This will greatly expand the use of the service from both the north and south links. Vehicles will be equipped with the capability to accommodate luggage.

Valley Metro has made arrangements to provide service for airport arrivals after the scheduled bus service has ended. This arrangement will be closely monitored in an effort to control the costs of the service.

Conclusion:

Both the Roanoke and New River Valleys, including Virginia Tech can benefit economically and ecologically from the implementation of this inter-regional transportation alternative. Valley Metro has aggressively secured the necessary funding for a multi-year period to allow the service to develop. The service will offer access to a host of locations: Roanoke Regional Airport, park and ride lots, and the central business districts of both urban areas. In addition, passengers will be able to access the two public transportation providers: Valley Metro in Roanoke and Blacksburg Transit in Blacksburg.

Linking the Communities of Roanoke, Salem, Blacksburg, and Christiansburg

Service Schedule

Service Provided Monday through Saturday

LEAVE CAMPBELL COURT	HIGHER ED. CENTER / HOTEL ROANOKE	ROANOKE REGIONAL AIRPORT	PARK AND RIDE I-81 EXIT 140	FALLING BRANCH PARK AND RIDE I-81 EXIT 118A	CHRISTIANSBURG K-MART	ARRIVE SQUIRES STUDENT CENTER	LEAVE SQUIRES STUDENT CENTER	CHRISTIANSBURG K-MART	FALLING BRANCH PARK AND RIDE I-81 EXIT 118A	PARK AND RIDE I-81 EXIT 140	ROANOKE REGIONAL AIRPORT	HIGHER ED. CENTER / HOTEL ROANOKE	ARRIVE CAMPBELL COURT
4:50A	4:52A	5:05A	5:15A	5:45A	5:55A	6:10A	6:20A	6:35A	6:45A	7:15A	7:25A	7:38A	7:40A
6:20A	6:22A	6:35A	6:45A	7:15A	7:25A	7:40A	7:50A	8:05A	8:15A	8:45A	8:55A	9:08A	9:10A
7:50A	7:52A	8:05A	8:15A	8:45A	8:55A	9:10A	9:20A	9:35A	9:45A	10:15A	10:25A	10:38A	10:40A
9:20A	9:22A	9:35A	9:45A	10:15A	10:25A	10:40A	10:50A	11:05A	11:15A	11:45A	11:55A	12:08P	12:10P
10:50A	10:52A	11:05A	11:15A	11:45A	11:55A	12:10P	12:20P	12:35P	12:45P	1:15P	1:25P	1:38P	1:40P
12:20P	12:22P	12:35P	12:45P	1:15P	1:25P	1:40P	1:50P	2:05P	2:15P	2:45P	2:55P	3:08P	3:10P
1:50P	1:52P	2:05P	2:15P	2:45P	2:55P	3:10P	3:20P	3:35P	3:45P	4:15P	4:25P	4:38P	4:40P
3:20P	3:22P	3:35P	3:45P	4:15P	4:25P	4:40P	4:50P	5:05P	5:15P	5:45P	5:55P	6:08P	6:10P
4:50P	4:52P	5:05P	5:15P	5:45P	5:55P	6:10P	6:20P	6:35P	6:45P	7:15P	7:25P	7:38P	7:40P%
6:20P	6:22P	6:35P	6:45P	7:15P	7:25P	7:40P	7:50P	8:05P	8:15P	8:45P	8:55P	9:08P	9:10P%
7:50P	7:52P	8:05P	8:15P	8:45P	8:55P	9:10P	9:20P	9:35P	9:45P	10:15P	10:25P	10:38P	10:40P
9:20P	9:22P	9:35P	9:45P	10:15P	10:25P	10:40P	10:50P	11:05P	11:15P	11:45P	11:55P	12:08A	12:10A#
10:50P	10:52P	11:05P	11:15P	11:45P	11:55P	12:10A	12:20A	12:35A	12:45A	1:15A	1:25P	1:38A	1:40A#

% END Monday-Thursday SERVICE **# END Friday and Saturday SERVICE**

STOP IN FOOD STORES
INCORPORATED

P.O. Box 12063 • Roanoke, Virginia 24022-2063
3000 Ogden Road • Roanoke, Virginia 24014
Phone (540) 772-4700 • Fax (540) 772-6800

February 24, 2004

Department of Environmental Quality
3019 Peters Creek Road
Roanoke, Va. 24019

Re: Ozone Non Attainment Compact

Dear Mr. Saunders:

Pursuant to our conversation, Stop In Food Stores Inc., has agreed to participate in the Ozone Non Attainment Compact with the Department of Environmental Quality. We are willing to offer incentives to our customers for the purchase of petroleum products before 8:00 a.m. and after 5:00 p.m. on certain designated days.

If you have any further questions, please feel free to call me at 540-772-4900.

Sincerely,

William E. Chenault Jr.
Environmental Projects Manager

Kroger Food & Drug
Tony Caputo
Risk Management /Fuel Centers

PO BOX 14002

Roanoke, VA 24038
Work Number: (540)265-3893
Fax Number: (540)563-1436

February 12, 2004

Mr. Bob Saunders
VA Department of Env. Quality
3019 Peter's Creek Road
Roanoke, VA 24019

Inspector Saunders,

Thank you for your follow-up call regarding Kroger's involvement in your Clean Air Project.

We would be happy to offer some form of incentive to customers to buy fuel before 8am or after 5pm on 4-5 days during the summer. These days would coincide with announced "high-pollution" days based on VA DEQ analysis.

Please forward me additional information concerning this program.

If you have any questions, I can be reached at 540-265-3893 or tony.caputo@kroger.com.

Tony Caputo
Kroger Risk Management

WORKMAN OIL COMPANY

P. O. BOX 566
14680 FOREST ROAD
FOREST, VA 24551
(434) 525-1615
FAX (434) 525-4826

SUBSIDIARIES
CARDINAL OIL CO., INC.
MADDOX OIL CO., INC.
ORANGE MARKET, INC.
AMOCO FOOD SHOPS

February 12, 2004

Mr. Bob Saunders
Department of Environmental Quality
3019 Peters Creek Rd.
Roanoke, VA 24019

Dear Mr. Saunders:

Thank you for the opportunity to participate in the high ozone incentive program for consumers. We have 11 convenience stores in the Roanoke/Salem/Daleville area. We are prepared to offer an incentive to consumers to purchase gas before 8:00am or after 5:00pm on high ozone days. We look forward to hearing from you regarding the details of the program.

Sincerely,

Warner L. Hall
President
(434) 525-1615

BOXLEY

March 8, 2004

P.O. Box 13527
Roanoke, Virginia 24035
540 777-7600

Robert Burnley, Director
Virginia Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

Dear Mr. Burnley,

Local governments in this region are cooperatively acting through the Roanoke Valley Area Metropolitan Planning Organization to enter into an Ozone Early Action Compact with the Virginia Department of Environmental Quality and the Federal Environmental Protection Agency.

Boxley Materials Company is a customer-directed supplier of quality construction materials in the Mid-Atlantic region. We are committed to providing honest, personal attention to the needs of our customers and the communities we serve. One of our Core Beliefs is to be responsible stewards of the environment. With this in mind, our company would like to support this Ozone Early Action Compact by voluntarily taking the following actions during ozone season to help reduce pollutants that form ground level ozone:

- Fueling on-/off-road mobile equipment before 8:00 a.m. or after 4:30 p.m. on days predicted to be Ozone nonattainment for the Roanoke Valley and not "topping off the tanks" at anytime.
- Limit any open burning to days that are determined not to be Ozone nonattainment for the Roanoke Valley when at all possible.
- Promote idling reductions in our mobile equipment fleets.
- Develop and follow Best Management Practices (BMP) for environmental impacts at our sites.
- Maintain on-/off-road mobile equipment fleet to operate at the highest efficiency.

Boxley Materials Company is committed to contributing to the ultimate goal of reduced Ozone levels by the year 2007. Our contribution to better air quality is one way to support our Core Beliefs and be responsive to our customers and the communities we serve. We are pleased to volunteer for participation in the Ozone Early Action Compact. Please let me know if you need more information.

Sincerely,

Timothy D. Mauzy

Timothy D. Mauzy
Resource Engineer

Roanoke Valley Area Ozone Early Action Plan (EAP)

01-22-2004

Cities of Roanoke and Salem, Counties of Roanoke and Botetourt, Town of Vinton

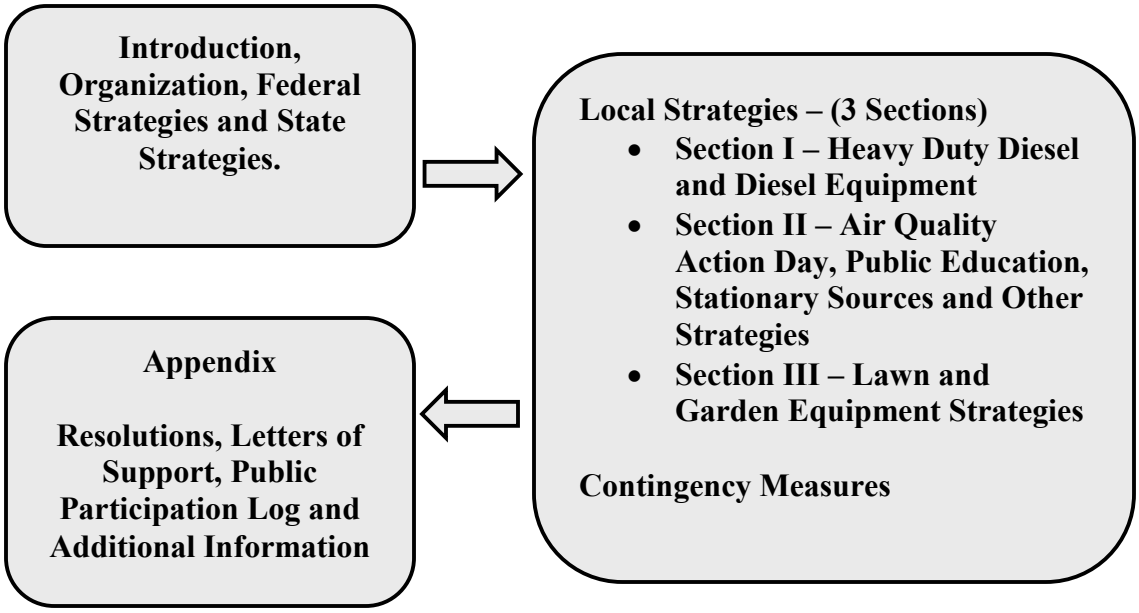
With the assistance of the Roanoke Valley Area Metropolitan Planning Organization and the Roanoke Valley-Alleghany Regional Commission (RVARC).

Introduction:

Elected officials representing local governments in the Roanoke Metropolitan Statistical Area (MSA) entered into an Early Action Compact (EAC) with both the Commonwealth of Virginia and the Environmental Protection Agency (EPA) for the area including Botetourt and Roanoke Counties, the Cities of Roanoke and Salem, and the Town of Vinton. All the parties involved signed and submitted the Compact to the EPA by December 31, 2002. The area then established and commissioned the Roanoke Early Action Plan Task Force to serve as the major stakeholder group to coordinate the development of the early action plan (EAP) for the area. The goal of an EAP is to develop a comprehensive strategy that will bring the area into attainment of the 8-hour ozone standard by 2007. We will achieve this goal by selecting and implementing local ozone precursor pollutant control measures that when combined with other measures on the state and national level, are sufficient to bring the area into compliance with the standard.

Organization of Early Action Plan (EAP):

The text of the EAP is organized along three major themes (see figure). First federal and state strategies are presented. These strategies are enforced from the federal and state levels respectively. The enforcement of these strategies will reside with the federal and state regulatory processes. The federal and state strategies are expected to substantially contribute to improved air quality in the Roanoke Valley Region.



The meat of the EAP resides in the Local Strategies. These strategies were developed by the Ozone Early Action Plan Task Force and submitted to general public review on several occasions. These strategies are tailored to the localities in the region and

represent a great opportunity for local control and involvement. These strategies are presented in three sections corresponding to Heavy Duty Diesel and Diesel Equipment, Air Quality Action Day and Various Strategies and Lawn and Garden Equipment Strategies. The Appendix contains Resolutions from the local governments as well as regional agencies, letters of support and commitment from private, public and non-profit organizations, additional information and details pertaining to some of the local strategies and a public participation log.

State & Federal Control Measures:

In addition to the local control measures, there several state and federal actions that have or will produce substantial ozone precursor emission reductions both inside and outside of the Roanoke Valley area. These reductions are aimed at reducing local emissions and the movement (transport) of pollution into the area. These measures, when combined with the local control program, are expected to lower area ozone concentrations to the level at or below the ozone standard.

Federal Measures:

On the federal level, numerous EPA programs have been or will be implemented to reduce ozone pollution. These programs cover all the major categories of ozone generating pollutants and are designed to assist many areas to come into compliance with the federal ozone standard. A brief description of these measures is provided below:

Stationary & Area Source Controls: In addition NOX SIP Call program, the EPA has developed a number of control programs to address smaller "area" sources of emissions that are significant contributors to ozone formation. These programs reduce emissions from such sources as industrial/architectural paints, vehicle paints, metal cleaning products, and selected consumer products.

Motor Vehicle Controls: The EPA continues to make significant progress in reducing motor vehicle emissions. Several federal programs have established more stringent engine and associated vehicle standards on cars, sport utility vehicles, and large trucks. These programs combined are expected to produce progressively larger emission reductions over the next twenty years as new vehicles replace older ones.

Non-Road Vehicle & Equipment Standards: The category of "non-road" sources that covers everything from lawn & garden equipment to aircraft, has become a significant source of air pollutant emissions. In response, EPA has adopted a series of control measures to address these sources. These programs include engine emission standards for lawn & garden equipment, construction equipment, boat engines, and locomotives. All these measure have been developed to address both the creation of ozone producing emissions in the local area, as well as reducing the movement of ozone into the area as a comprehensive approach to reducing ozone levels. A full summary of these state and federal measures is presented in Appendix B.

State Measures:

At the state level, several significant actions have been taken. First, in response to EPA's call for the reduction of NOX emissions from large combustion sources (i.e., the NOX SIP Call), the state has adopted and will implement a program to significantly reduce emissions on NOX as part of a regional program to reduce ozone transport. This program alone is predicted to reduce ozone forming NOX emissions by up to 30,000 tons per ozone season in Virginia. Secondly, the state opted into the National Low Emission Vehicle program that began to require less polluting vehicles in the state, beginning in 1999. Also in 1999, Stage I vapor recovery systems were required at gasoline stations in the Roanoke area. To further address local emissions, the state has recently adopted Reasonably Available Control Technology (RACT) controls for industries in the area, to further reduce the local contribution to ozone formation. The emission reduction expected from RACT in the area is currently being evaluated on a source-by-source basis. Compliance with the RACT rule will be required by the end of 2005.

Definitions:

Air Quality Action Day, Days Forecast to be Nonattainment and "Code Red Days" – for the purpose of this document all occurrences of "Air Quality Action Day," "Days Forecast to be Nonattainment," "Code Red Days, and/or similar statement in the profiles of various strategies refer to days which are forecast to be at 85 ppb or greater for an 8-hour average concentration of Ozone. As far as this plan is concerned, this definition supercedes other air-quality definitions and/or indexes, which may be in common use by other agencies and employ a similar terminology. This definition could expand to include a standard for fine particulate matter (PM 2.5) in the future if necessary.